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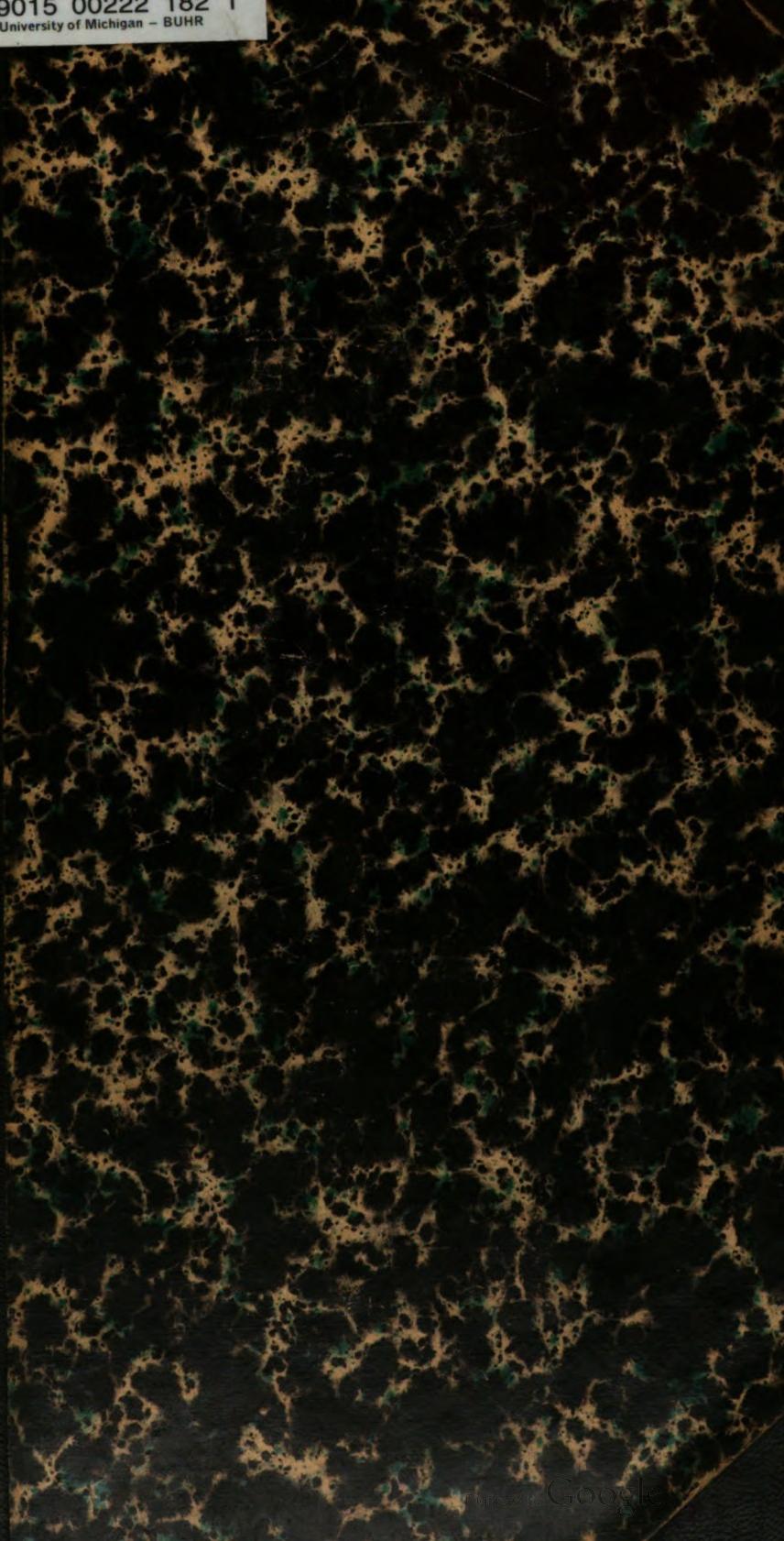
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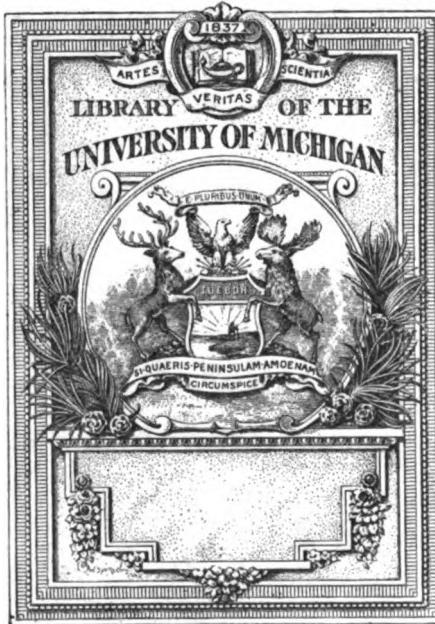
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**NEUROLOGY AND PSYCHOLOGY,
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*Intended especially to subserve the wants of the
General Practitioner of Medicine.*

"Quantam ego quidem video motūs morbosī fere omnes a motibus in systemate nervorum ita pendent
u morbi fere omni es quodammodo Nervosi dici queant."—*Cullen's Nosology: Book II., p. 181—Edinburgh Ed. 1780.*

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ORIGINAL CONTRIBUTIONS.

WHAT ARE MENTAL DISEASES?*

By PROF. RUDOLF ARNDT, Greifswald.

THE question, which I have chosen as the title of this paper, has been asked many times, and likewise answered according to the standpoint of the person replying. The psychologist answered it from his psychological standpoint accepted at the time, the anthropologist from his standpoint represented in anthropology, if he were a materialist, according to the materialistic view of life, if he were a monist, then in accordance with monism, if he were a dualist, then corresponding to dualism, and so true to the view of life as vitalist, animist, spiritualist, which is the foundation of vitalism, animism and spiritualism, if he were a pathologist, especially and likewise a physician, then in harmony with the pathological views he entertained. As special pathologist he answered it according to the teachings of special pathology, as general pathologist, in accordance with those of general pathology, *i. e.*, that local troubles may be merely the expression of general disorders, as, *e.g.*, certain liver affections, kidney troubles, the consequence of fright, certain nervous disorders, neuralgias and spasms,

*Translated by Dr. W. A. McCorn.

anaesthesia and palsies, the result of uraemia and urataemia, of the toxic effect of alcohol or tobacco, as well as that certain diseases of the mucous membranes or bones, are the consequence of dyscrasias, like scrofula, syphilis, scurvy, or, that general troubles are developed, when only a very small part of the body is affected, that a simple fracture, a perios-titis limited to a small area, simple dentition, may cause considerable fever with a rise of temperature to 40° to 42°, a very marked feeling of indisposition and *malaise* of the whole body, a profound depression and finally a complete instability in the person otherwise apparently normal. If he, the pathologist, physician, still has no independent views and is unable to shake off the traditional teachings and opinions, although he no longer wholly approves and regards them as inviolable, so he states, because he knows of nothing better to offer: We do not yet really know what mental diseases are. However, as we know that it is the brain by which the mind and all that ascribed to it according to prevailing opinions, is manifested, so it must be affections of it and its parts, which cause mental diseases and determine their nature. He could then well say: Mental diseases are brain diseases, in consequence of which the so-called mental faculties, the feelings, thoughts and efforts have especially suffered, and, nevertheless, after just saying what mental diseases are, we still do not know exactly or perhaps not at all, for according to the opinion of special pathology they are regarded merely as brain diseases.

It is certainly correct, that which we call *mind* or *soul* in ordinary parlance, where the two expressions are not strictly separable, or *psyche*, according to foreign, antique Greek usage, that this something is only brought about, according to all experience, by the brain and certainly by the cerebrum and in particular by its gray cortex; still is it likewise demonstrated that mind, soul, psyche necessarily originate merely in the brain, solely by its action, so to speak, or is only thus manifested? There is a very prevalent theory which claims that. According to it the brain and its individual cells, respectively cell combinations, secrete the various mental or psychical actions, and, accord-

ing as these are endowed, they appear as feelings, sensations, perceptions, as thoughts chiefly, as ideas, combinations of ideas, as will, and so finally as intellect, reason and volition. By their consequences they become tangible, sensible, perceptible in the same person, in that their manifestations, corresponding actions are again felt, again experienced, again perceived. The brain acts, according to this theory, somewhat like the liver in secreting bile, somewhat like the kidneys in excreting urine, the sweat glands, perspiration, the lachrymal glands in secreting tears, or also somewhat like the heart in effecting the circulation of the blood, similarly to the lungs in the interchange of gases between the blood and the air. According to this theory the brain and its cells act automatically, just as the organs should, which have been mentioned. And the reason of it can be nothing else than the autonomy, the sovereignty of the cells, of which they are composed and which also has been learned for their numerous combinations, but evidently does not exist. All cells are conditioned by their surroundings and, corresponding to these changes, their action and their appearance. The cells of all many-celled bodies are mutually conditioned. Then all these cells with the exception of the blood, lymph, migratory cells and the like, are united with each other, if the majority, perhaps by wide detours, and mutually effected by means of their unions. Every cell of a many or several-celled body, except those mentioned above, are united with every other cell of this body and is dependent on them. Therefore a true autonomy cannot be spoken of in regard to them and so equally as little of an autonomy and its corresponding automatism of the brain and its parts. The brain, as the mental organ, as the organ of the soul, as the so-called psychical organ, is wholly dependent on the rest of the body, *i. e.*, its cells. The nerves, by which it is connected with these, and without which no action, mental or psychical, can occur, demonstrate the dependence in question.

But now if the brain is not an autonomic and hence not an automatic organ, what else does this show?

The brain of vertebrates, man, originates, as is known,

from the posterior horns or posterior columns of the gray nucleus of the spinal cord, besides at a time when this has long been active and even experienced a certain differentiation. In the present individual it then originates relatively late. Still the spinal cord is produced from the uppermost, epidermoidal blastoderm, the epiblast. After the development and cleavage of the undermost or so-called hypoblast from it, which latter may also be termed the epithelial or entodermic layer, nevertheless the two layers now present remain intimately connected in the so-called axial cord of the embryo, and this union continues through the whole life. An active cell growth occurs in the axial cord. Its cells multiply by division; still their division is never complete. They always remain connected by fine protoplasmic masses, usually of a fibre-like nature. Consequently this cell proliferation produces in the middle of the axial cord two longitudinal folds, the dorsal or medullary folds, and proportionately as these become higher and higher, a groove or furrow appears between them, the primitive furrow or medullary groove.

The primitive furrow or medullary groove is lined with the cells of the epiblast, in which it originates. Its cells are then in the most intimate connection with the cells of the latter, and the protoplasmic masses, which in each of the cell divisions in question continue, make up the stated connection. That is brought out in paths established by transmission. From these cells by their multiplication, be it by accretion from without of and over the dorsal folds, be it by divisions which have taken place in them, the bulk of the spinal cord is produced! Meanwhile the dorsal folds are raised more and more, their free upper borders incline towards each other, meet, coalesce and so form a canal, in whose interior lies the spinal cord, and hence has been named the neural canal. It is usually taught that this neural canal with its contents, the spinal cord, is formed in the way described, but is also marked off from its surroundings. Yet this last expression leads to misconceptions. For in reality the spinal cord is not marked off from its surroundings, especially not from the latter or peripheral part of

the blastoderm called lateral plates with respect to the axial cord. By several cell tracts, which traverse the wall of the neural canal with its manifoldly differentiated cells in the path above mentioned established by transmission, they remain united with these, especially with several of their groups.

In the meantime the two blastodermic layers, respectively their lateral plates, have split to the axial cord. From the two former cell layers four have originated, and of these the new ones, the secondary, lie between the old ones, the primary. The primary blastodermic layers are the sense layers; the secondary are the fibre layers. They are all connected with the axial cord and by the axial cord with each other and again in the stated paths with the spinal cord.

Similarly as the spinal cord originates from the epiblast, the trunk of the sympathetic nerve is developed from the hypoblast. But the former occurs on the upper surface of the axial cord, so the latter is formed on its under surface and hence the former is enclosed in the neural canal, so at this time of life lies free on the surface. By definite cell tracts descending from the formative period of the embryo it nevertheless remains connected with the former, and in paths rendered constant by heredity, which in part coincide with the former, by which the connection of the spinal cord with the cells of the epiblast occurs, makes it evident.

According to the previous statements, all cells, formative cells, of an embryo, and for the present purpose, especially an embryo vertebrate, respectively a man, are connected, and in a connection effected by fibrillary protoplasmic masses which unite them, so this connection is still especially intimate between certain cell groups. So, *e. g.*, it is particularly close between the several layers and the fibre layers belonging to them, then again, *e. g.*, between the first and second and between the fourth and third and the so-called secondary blastoderm. The more the body is developed, the greater it becomes and it occurs preferably by accretion and development of the lateral layers and their elements, the more in respect to it as the whole of its axial cord is

diminished, particularly atrophied, so that from it in the completed state only vertebral column and head are produced, the more so at any rate the more distinctly certain is this connection shown solely by means of the spinal cord and trunk of the sympathetic nerve. By the spinal cord and trunk of the sympathetic nerve, which are united with each other, all parts of the body are connected, and so then each cell is connected with every cell of the body.

The protoplasmic masses combining the cells become stronger, coarser, more or less thread-like, and by the union of many such lying in the same direction, nerves are formed. The nerves originating in the sense layer appear from the periphery and are further developed to the spinal cord and trunk of the sympathetic nerve; whereas the nerves occurring in the fibre layer are formed from the spinal cord and trunk of the sympathetic nerve and are developed toward the periphery. In the direction in which the nerves originate and are developed they can be excited in the way peculiar to them, *i. e.*, in their energy, and they conduct only their own excitement, respectively their stimulant, for the time being. The nerves originating in the sense layer, the sense nerves in the broadest meaning of the word, which, as we know, cause feeling, conduct the excitement merely from the periphery of the body to its centre, and to the spinal cord placed in it, respectively trunk of the sympathetic nerve, whereas the nerves springing from the spinal cord, as well as from the trunk of the sympathetic nerve, which are propagated in the fibre layer, from the centre of the body to its periphery. Therefore the former are called centripetal, the latter centrifugal nerves. The former transmit the impressions of the world and its forces, stimulants, from the surface of the body to its interior: they receive the stimulants, respectively the immediate effects on it; the latter conduct them again to the periphery and so convey them to the surroundings, *i. e.*, to the world. Therefore the former may be termed *receptive*, the latter *reactive* nerves. For the former, as said, convey the effects of irritation, which ensue to the body and cause perceptible feelings, vague sensations or definitely clear perceptions;

whereas the latter cause the actions. So by the former, sight, hearing, smell, taste, touch, hunger and thirst and the feeling of all the needs, are effected, that may be active in the animal; by the latter, processes of nutrition are effected, which are manifested in growth, in secretion and excretion or general movements.

Each sense nerve passes into an action nerve, which takes its origin from this, through the spinal cord or trunk of the sympathetic nerve, in whose protoplasmic masses between its cells or in its individual cells it is resolved. But each sense nerve and action nerve belonging to it hence represents in a certain measure only a single nerve, which has its origin in a sense layer, its termination in the related fibre layer and is interrupted in its course by cell masses, masses of the spinal cord, sympathetic cell masses, individual cells even. The beginning and terminal parts of such a nerve, its receptive portion, as a rule, lie close together, in that, in the spinal cord, in the sympathetic cell mass, it is sharply bent, reflexed; the part of the spinal cord, the sympathetic cells in question, the occasional single cell seems consequently to depend on the arc, reflex arc thus produced, of the whole of these nerves, and to unite a receptive and a reactive function with each other.

Thousands, millions of such nerves lie together, well isolated in their course to and from the centre, but amalgamated with each other in the interior by their spinal cord, respectively sympathetic cell masses. The amalgamated spinal cord masses of individual nerves form the spinal cord as a whole. The amalgamated sympathetic cell masses form the contents of the ganglia of the trunk of the sympathetic nerve. As in the spinal cord, so in the ganglia of the sympathetic nerve, the centripetal, receptive, sense nerves are bent, reflexed into centrifugal, reactive, action nerves, so the spinal cord and the ganglia of the trunk of the sympathetic nerve prove to be mere reflex apparatuses, in which the forces of the world, respectively the universe, are transformed into the so-called vital forces of the body and their manifestations. In the spinal cord such a transformation occurs chiefly of those forces which

act on the external surface of the body; whereas in the ganglia of the sympathetic nerve those ,which exert their effect on the interior. As spinal cord and trunk of the sympathetic nerve are united—by the rami communicantes, an interchange of their elements—so in both reflex apparatuses both of the categories of force mentioned are transformed into all the vital processes peculiar to the body concerned. The spinal cord and trunk of the sympathetic nerve united with it, are therefore a reflex apparatus, by means of which any irritation which acts on the vertebrate animal, can be transformed into its proper manifestation.

The longer the spinal cord and trunk of the sympathetic nerve are developed the better they are. Their cell masses are differentiated, in that some are transformed into larger cell-like bodies with longer or shorter processes, so-called ganglion bodies; their others with their protoplasmic masses serve for the formation of nerve fibres, by which the most diversely fixed relations and combinations are maintained. In the spinal cord these differentiations are especially vast, and consequently the spinal cord itself is a mechanism finely perfected for so many relations of the kind, that it seems in the whole reflex apparatus the spinal cord-trunk of the sympathetic nerve is by far its most important part. The spinal cord is pervaded by nerve fibres its whole length, from above downwards and from below upwards, and transversely from right to left, as well as from left to right, contains groups of ganglion bodies of every form and size, of protoplasm of definite limits and form, the so-called gray nerve substance, so that the sympathetic nerve with respect to it gives an impression of inferiority, dependence, that it is rather to be regarded

- as a mere offshoot, branch of the spinal cord. Yet it is not, according to its entire origin, its whole development; still in consequence of its union with it by the rami communicantes it has been subordinate to it in its creation of the brain, at least to a high degree. *Qui a compagnon a matre!*

From this principal part of the reflex apparatus, the spinal cord, which in a certain measure lies in the midst

of the general nervous system, the receptive and reacting, as well as the sympathetic portion usually regarded equivalent to both, the brain is developed. It is developed from the masses of protoplasm of the posterior portion of its so-called gray nucleus, *i. e.*, from the part, which later, after further differentiation, is given the name of posterior horns or posterior columns. In the fowl it occurs between the first and second, perhaps first in the second stage of incubation, in the rabbit not before the ninth stage of development, in man in the second week of development. (Bischoff, His, Haeckel, Kölliker).

But the gray posterior horns or posterior columns of the spinal cord belong wholly to the receptive portion of the nervous system; its gray anterior horns or anterior columns to the reactive; the parts uniting them are perhaps of a mixed nature, belonging in part to one and in part to the other. In common parlance the receptive portion of the nervous system is called the sensory, feeling portion; the reactive, as its opposite, the motor, inducing motion. Yet this is not well. It causes misconceptions and these lead to further erroneous ideas, respectively grave errors. The receptive portion effects only feelings, sensations. These occur somewhere else, in the brain, and in a definite manner, in that part we call the cerebrum. But the reactive portion also causes other actions than mere movements, *i. e.*, the gross mechanical, which are generally thought of; its chief function is the introduction of metabolic processes, then chemical movements, causing according to their kind, evolutions and involutions, thus leading to enlargements, growth, or diminutions, atrophy, which in the glands produce secretions and excretions, and in the muscles by alternating contraction, shortening, and relaxation, extension, resulting in gross mechanical movements, motions, accordingly they receive the name of motor nerves.

From the receptive, the so-called sensory portion of the spinal cord, the brain then derives its origin, in that it is put forth in its first elements from it, as the spinal cord as such originated from the cellular basis of the whole nervous system. The same formative impulse, Blumenbach's *nitus*

formativus, which is simply the expression of a chemical, metabolic process induced by the forces of the world and brought about by the centripetal nerves at the given place, the same formative impulse, *nitus formativus*, which is asserted in the formation, production of the former, is manifested also in the formation, creation of the latter. The brain originates fundamentally from the spinal cord and conformable to the effect of the forces of the world, just as the latter originated from the nerve elements already present, likewise fundamentally and conformably to the forces of the world, which acted upon it. The brain is a product of the reflex action of the spinal cord and bears in itself all the marks of a reflex apparatus.

The spinal cord in its developed and, in a certain measure, perfected state is in the vertebrate a long, relatively slender, cylindrical body. Its superficial part is formed of nerve fibres, of which we have already spoken, and its interior is composed of the protoplasm which forms its gray nucleus, also mentioned. This gray nucleus of the spinal cord consists of a slender middle portion and four longitudinal processes projecting from it, two forward and outward, two backward and outward, into the more superficial masses of nerve fibres, which are named the white substance of the spinal cord. The middle portion is permeated nearly its whole length by a small canal, which, owing to its location, is called the central canal. On transverse section of the spinal cord a picture is presented to us in which a white mass encloses a gray one, sending out two sharply defined processes forward and outward, two backward and outward, and in its centre a point apparently excavated, porous. The former are the gray horns or columns already mentioned, its anterior and posterior horns, anterior and posterior columns, the latter its central canal.

In its upper portion, later cephalic part, the spinal cord undergoes a marked development at a definite period. In this part a number of sensory nerves inosculate, which have been very definitely changed in their character by very definite external forces and since then give rise to very definite and hence special functions. These are the so-

called higher sense nerves with their specific energies, the nerves of sight, hearing, smell and taste, or the optic, acoustic, olfactory and gustatory nerves, which besides the nerve of general sensation, respectively tactile, the trigeminal nerve, all arising from the same group, are the cause of especially common and powerful irritations, as well as processes effected by development. The spinal cord and its essential part besides the gray nucleus increases in size, grows; still, going hand in hand with this, a greater differentiation occurs. From the cellular structure arise different, especially formed ganglion bodies according to the locality, from the protoplasmic substance combining them isolated nerve fibres and with them both elements effecting numerous, fixed unions between those previously present. The indefinite, complicated relations, so to speak, between them are thus done away with and replaced by those more definite, simpler, if also more numerous.

By the increase in size of the gray nucleus its envelope, the fibres of the white substance, becomes too small for it. It separates between the two so-called posterior columns, respectively *funiculus gracilis* and *funiculus cuneatus*, thus opens the central canal and forms from it the *fovea rhomboidalis*, the floor of the fourth ventricle. Then at their external borders the *funiculi graciles* and *cuneati* pass into the restiform bodies, *corpora restiforma*, which with other similar columns are disseminated in the *crura cerebelli ad pontem* and *ad corpora quadrigemina* in the substance of the cerebellum. The cerebellum forms the roof of the fourth ventricle and likewise the union, a sort of commissure, between the two halves of the spinal cord cleft by excessive distention, which is here called medulla oblongata, or spinal bulb, *bulbus rhachidicus*. So the cerebellum seems to be like a substitute, at least a perfected substitute for the posterior gray commissure of the spinal cord, which must necessarily be lacerated in opening the central canal, and with its hemispheres placed on the *corpora restiforma*. Has the gray substance of the cerebellum arisen from it? Its origin, particularly of its cortex, is otherwise undiscoverable.

The cerebellum is connected with the spinal cord, from

which it has arisen, merely by the pedicles and columns previously specified and are composed of afferent as well as efferent nerve fibres. Hence it may be proper to conclude that it, like the spinal cord itself, is merely a reflex organ. Observations ever more indicate it.

By the experiments of physiologists we have learned that the cerebellum is especially concerned in motor processes. It looks after coordinations, and in particular those dependent on the hearing. When the fish in the water, *e. g.*, the carp, all of a sudden turns from where it is lying quietly and hastily darts away, because someone who walks heavily has stepped on the bridge which spans the brook; when a flock of birds, sparrows, starlings, crows or doves, suddenly rises and with loudly flapping wings flies away, because a gun has been fired in the vicinity; when we involuntarily spring aside and make various motions, because a loud crash has occurred near us; when, on the other hand, we listen to a quickstep, our legs involuntarily keep time to the music or in dancing to the rythm of the waltz, polka or gallop, these are all purely reflex movements. The sound impressions are taken up by the acoustic nerve, conducted to its so-called primary nucleus, yet in reality discharge nucleus, in the medulla oblongata, peduncles of the cerebellum, which form a part of the restiform bodies, to the cerebellum, itself, and here are finally transferred by the coordinating apparatus to the primary nucleus of the centrifugal nerves in the medulla, by which they will be manifested, in this case the facial nerve and nerves of the arm and leg.

The *fossa rhomboidalis* is narrowed anteriorly, in that the *crura cerebelli ad corpora quadrigemina*, which form its anterior external boundary, approximate more and more. From it arises the *aquaeductus Sylvii*, whose cover, roof, is formed by the *corpora quadrigemina*, and which are produced from the existing components of the spinal cord similarly as the cerebellum at its place.

The *corpora quadrigemina* are an apparatus, which serves for the coordination of movements and, according to all experience, those particularly arising through sight, the

eyes. They are then a reflex apparatus which is chiefly engaged in transforming the impressions of sight into appropriate, suitable movements, without their being really intentional and thus having been willed, as it seems. Actions occur, which look as if willed and yet are not. They are involuntary. After they have been executed or as they were being executed, the individual is first conscious of them. The person is often ashamed of them, regrets and is unable to pardon them; and do we not find these in animals, particularly in the well-trained dog?

A light, a bright flash, occurs, and at the same instant we quickly jump aside, possibly cry out, thus pushing, even injuring persons, upsetting, destroying valuable objects. We were startled, as if stupefied by fear; we involuntarily sprang back; how and what happened we only clearly understand later, after it has occurred. We then become conscious of what has transpired, and how improperly we had behaved. A dog often acts very much in the same way, which, surprised by the unusual sight of a person and is thus startled, leaps at him, seems inclined to bite, until it recognizes the person as a friend and now ashamed slowly sneaks away with lowered head and tail. When the horse quietly trotting along the pleasant path of the shady park suddenly sees a large gray stone threateningly projecting from the thicket and so, startled, shies, then to all appearances a very similar process has occurred as in the dog, which snapped and would bite, and very similarly it might also be finally with a wild animal, *e. g.*, a doe, which I had approached to within six or eight paces, by stealing upon it through the bushes, and the moment it spied me on raising its head, turned and leaped into the pikes.

Above the *corpora quadrigemina*, in man and the higher mammals covering them by its posterior parts, the so-called occipital lobes, lies the cerebrum, that part of the entire brain, which our experience has taught that in it alone our conscious actions, which in daily, ordinary life are called the mental, and in the sense of certain philosophers, the intellectual actions or briefly the ideas. The cerebrum is the organ of ideas, soul, mind or, as it is called by naturalists

and physicians, the psychical organ. All psychical actions, all mental processes of these creatures, occur in or through it—at least not alone, but chiefly—and again there are certain parts by which this especially happens.

As the most prominent of these parts, based on the observations and experiments in physiology and pathology, is the gray matter, which forms its cortex. This, according to what we know of it, is the real, true substance of consciousness and hence also the real, true substance of ideas by which all feelings, sensations, perceptions, thoughts and volition are called to life and so what we call soul and mind, produced. And we likewise have the more right, and are even obliged to assume this, because wherever we have reason to presume consciousness, we find this substance, a protoplasm changed in a definite way, as its probable basis: so in the central nervous system, particularly in the esophageal ganglia of articulates, insects, spiders, crabs, worms, the so-called mollusks and radiates, as well as finally in the entire body substance of the so-called zoophytes and infusoria. Indeed, should conscious processes exist in the vegetable world and the corresponding states be manifested, they are certainly united with a similar substance, a protoplasm always well characterized as such. Even to a certain degree all protoplasm seems sensitive, *i.e.*, of being capable of sensation, and so then to a certain degree all might have consciousness.

Nevertheless in my opinion it would be very, very wrong to assume that the substance of consciousness, and especially the gray cortex of the cerebrum of vertebrates and with them of man, produces consciousness in a form, principally as abstract concepts and combinations, thoughts, thus solely of itself, in a certain measure automatically. It is often erroneously believed however, in my opinion, as I have shown. This belief descends from an older period, when automatism played a great role, and not much is known either of the constancy of force or its continuity. Still we do know that no force is lost, but also that no new can originate, but where one or the other seems to be the case, it is always merely a matter of the transformation of

a definite force into another, especially the transformation of a molar force or movement into a molecular and atomic or inversely, since automatism is out of the question; surely as such strictly. For as there is no real automatism in the whole great universe, so in no part or parcel of it. Such of its parts are however the creatures of Mother Earth gifted with consciousness and such particles the substance of consciousness found in them and with it naturally the gray matter of the cortex of the cerebrum of vertebrates and man. The gray cerebral cortex of man, its substance called the psychical organ, owing to its being the organ of consciousness, concepts, feelings, thought and volition of this creature, never acts automatically, but always to incitement, and to incitement from without, in the latter case from the world; it then acts, as we say in physiology, reflexly. The cerebrum as such is then to be considered a mere reflex organ, like the *corpora quadrigemina* and the cerebellum, or also the spinal cord, from which both have been produced as results of reflex action, as has been shown. Its genesis, its adaptations are evidences of this, if they are considered unbiased and not obscured by old and antiquated dogmas.

The *aquaeductus Sylvii*, the part of the opened central canal of the spinal cord, which is bridged over by the *corpora quadrigemina*, is now widened into a larger cavity, the remnant of the former, original vesicle of the embryo's forebrain. But be it expressly said, in a certain measure superfluously, that this vesicle of the forebrain, like all the other brain vesicles, is only a dilatation of the primary spinal cord, and the cavities merely expansions of its cavity, *i. e.*, its later central canal. Then the *aqueductus Sylvii*, evolutionally a part of the central canal of the spinal cord or spinal cord canal in itself, is broadened anteriorly into a larger cavity of the developed brain, namely its so-called third ventricle and, itself connected with the lateral ventricles by the foramen of Monroe, into the ventricles of the cerebrum. These ventricles in their connections are the remnants of the cavity of the embryonal anterior brain vesicle, which is not filled like its other, far larger part

with nerve elements from their wall in consequence of growth of its elements, which later become special nerve structures, nerve fibres and layers of gray matter forming the cerebrum, *i.e.*, its two hemispheres.

In this filling of the forebrain vesicle with the products of growth, respectively differentiation, of its wall elements, originally spinal cord elements, on the whole, the type is retained, like that of the spinal cord itself and from it, *i.e.*, according to its design, the cerebellum and the *corpora quadrigemina* are developed. In the division of the spinal cord in its uppermost cervicle portion between the *funiculi graciles* and its thus opened central canal to the floor of the fourth ventricle those of its parts, which had formerly been placed behind each other, now lie side by side. The parts, which formerly were placed anteriorly, now appear in the middle, those found posteriorly, now externally, at the margin. The gray nucleus in its details now shows this very plainly. Its anterior horns, respectively their descendants, now lie close to the middle line, near the raphe, whereas its posterior horns, respectively their descendants, exteriorly to them. The former are connected with reactive, commonly called *motor* nerves, in a certain sense give them their origin; the latter with the receptive, sensitive, commonly called *sensory* nerves, effect their entrance into the central nervous system, indicate, in a certain sense at any rate, their terminal point in it. Yet, as will be remembered from what has been said, the terminal point of the sensory and origin of the motor nerves, which has recently been termed their nucleus, are always related, if many times indirectly, and for this reason, as we have learned, the spinal cord and with it the whole central nervous system, is then the well organized reflex organ, which I have repeatedly tried to describe.

Then the nuclei of the receptive or sensory and the reactive or motor nerves are always united, if the arc of nerve structure, by which it occurs, the so-called reflex arc, is often quite long and frequently turned and twisted, and their nuclei, as in the true spinal cord in the back, lie one after the other, or as its part in the head, beside each other, as well as appear greatly changed in their form.

In the ventricles of the cerebrum, the third and its lateral ventricles, which we have become acquainted with as an expansion and so as a mere continuation of the central canal of the spinal cord, just as in the fourth ventricle and the *aquaeductus Sylvii*, the conditions correspond. Also in them, respectively in their walls or merely in definite parts, groups of nerve nuclei are collected, as well receptive, sensory, as also reactive motor nerves, and groups of both representing large structures, are separated, being half beside, half behind each other. The *thalami optici* and *corpora striata*, strictly *corpora caudata*, are the most important of this group and correspond, respectively are produced, from the original horns of the spinal cord, the former from the posterior, the latter from the anterior. The former are hence united with the centripetal, receptive, so-called sensory nerves, which they receive especially through the *tegmentum pedunculorum cerebri*; the latter with the centrifugal, reactive, commonly called motor nerves, which they send out through the *pedunculorum cerebri* to the different organs of the body.

I must here expressly state that the centripetal nerves have been formed toward the centre and therefore, so to say, ascend toward the centre, whereas the centrifugal nerves appear from the centre and hence in a certain measure descend from the centre. The processes of conduction, *i. e.*, the motor processes of atomic and molecular kind at their foundation, were the cause and conformable to the way the appropriate motor processes of the world as so-called irritation, acted on them. The world with its motor processes, irritations, and the direction in which these occurred, created the nerves as they are, as centripetal to a definite centre, as centrifugal from this centre to the world again. The centre itself, *i. e.*, its substance as a rule a larger or smaller collection of gray matter, effects the transfer from the former to the latter, brings about the most strongly pronounced effect of the former in the latter and consequently represents what we call force, *i. e.*, motor transmitter or, briefly, a transfer, in physiology, a reflex organ. In it the movements, irritation, are transformed

into the other, as, *e. g.*, in the closure of a broken electric conductor the electric current into chemical action, light, heat, and by the apparatus connected with it into letters, words, whole sentences, whole songs, and so, if you like, into ideas, feelings, sensations, thoughts, but appropriate motor nerves arising from it, never originate in it of themselves, *i. e.*, automatically.

The *thalami optici*, which correspond to the posterior horns of the gray nucleus of the spinal cord, respectively to its like named processes or columns, are, like these, of receptive nature; the *corpora striata sive caudata*, which in my opinion are homologous structures to the anterior horns of the gray nucleus of the spinal cord, respectively the like named processes or columns, serve, like these, the reactive processes. They effect the reactions, which are produced by the irritation received or, as it is usually expressed, has been apperceived, by its nucleus of gray matter, and these processes are rendered possible, induced by the force transmitter, which exists between the optic thalami and *corpora striata*, *i. e.* through the cerebral hemispheres.

According to this description the optic thalami and *corpora striata*, although as has been said, they are located in the cerebrum, yet do not belong to it, but entirely to the part of the spinal cord from which they have been produced; other authors, brain experts of the first rank, have similarly comprehended and described them, if not in the same way. They have been described as belonging to the large ganglia at the base of the brain and as essential parts of the brain stem, *i. e.*, of the modified, I will say, cephalic spinal cord. But the cerebrum in itself, its real mantle so-called, could then have developed from the part of the gray nucleus of the spinal cord in itself, which is located close behind and beside the central canal, from which, as we assume now, the cerebellum has been formed. From this part of the substance of the gray nucleus of the spinal cord, which might attain a certain capacity for feeling, sensation, the brain mantle as the real organ of consciousness and the gray matter in it, particularly the gray cortex

covering it, as the real substance of consciousness in vertebrates, man, could then finally have originated, first by ever further elaboration of its chemical condition in the special direction, again by ever further decomposition, as well as organization in the details of its mechanical structure.

Accordingly as the brain mantle has arisen chemically and mechanically, it must act; accordingly will occur the processes of consciousness, which originate in it, *i. e.*, the ideas, feelings, sensations, perceptions and then again the corresponding efforts, impulses and volitions, in short all that we embrace under the term "emotion, mind, psyche." Yet in whatever way it acts, it never acts automatically, but only from excitement, stimulation from without, and this is the creation of consciousness of what excited, stimulated it. Its actions make the individual to whom it belongs, conscious of how the world with its various irritants acts on it, and then how it has to behave properly, because conscious. This organ of consciousness, this substance of consciousness, which according to our statement was developed from and through the whole nervous system of the creatures provided with it, hence originates from whatever these originate. Like all the forces which they manifest, are the forces which come from the universe, in which the force had like value. All individual consciousness, whenever and however it is manifested, can only be a part, a component, of a consciousness which fills the universe. If every thing, every being, is a component of the great, infinite, eternal universe, so must all consciousness, whenever and however we find it, be a component of a great, broad, infinite, eternal consciousness, which extends as far as the universe extends with all that is in it.

Therefore, we may conceive the whole affair as follows: Into the thalami optici, respectively into its nuclei of the gray matter, pass the nerves from the periphery, *i. e.*, the centripetal, reactive, coming from the various organs, because originating in them. Some, *e. g.*, going from the corpora quadrigemina, from the cerebellum and hence centrifugal, reactive, pass to the periphery, to again return as

new centripetal nerves after they have entered and been broken up in the gray nuclei of the organs named, in a certain measure collected from them. Yet surely by far the most of them ascend as centripetal, reactive, from the corpora quadrigemina into the brain mantle, the real cerebrum, and these are especially the posterior portions, *i.e.*, lying behind the central convolution, with whose mass of gray matter they are united. But now the nerves coming from the periphery, from the sense organs, are reduced in number and size in the collections of the gray matter, which they had to pass through, consequently their mass is as good as collected in the tegmentum pedunculorum cerebri, so now in their transition into the brain mantle multiplications occur. They multiply in corresponding layers of gray matter, in which they break up and, increased in number, again pass out of it. The gray matter in the external inferior portions of the corpora quadrigemina, which, permeated by the so-called concentric laminae medullaris, causes their radiations, especially plain on transverse sections, seem to do this particularly. The centripetal, receptive nerve fibres markedly increased in number in this way, then pass into the gray cortex and unite more or less intimately with its elements. Then from these, new nerve fibres are developed which again pass to adjacent as well as more remote parts of the cortex and unite either directly or by means of the third and fourth or also tenth and twentieth of such transitions, and finally pass out of the cortex as nerve fibres, very similar or like those arising from the anterior parts, *i. e.*, in front of the central convolution, into the medullary masses covered by if, the great medullary layer, to reach through this the corpora striata, respectively its adjacent structure, the lenticular nucleus. In the layers of gray matter, from which these two bodies, belonging together to a certian degree, chiefly consist, the masses of nerve fibres, which come from the cerebrum are reduced in size and number. The opposite of what transpires in the corpora quadrigemina occurs within the corpora striata and lenticular nucleus in apparently quite similar manner. In the former the incoming nerve fibres are likewise broken

up; in the latter those in a certain measure recurrent are again collected. The collected nerve fibres reduced in number then enter the pes pedunculorum cerebri, there undergo further reductions, to all appearances by Sömmering's substantia nigra and then pass on, forming the pyramidal tracts so-called, to the spinal cord, from which they pass out in very definite, characteristic way as centrifugal, reactive nerves to the periphery or various organs of the body.

The last mentioned ways are those by which the corresponding centripetal, receptive nerves from the periphery, from the organs, pass in to be transformed, as has been shown, in the gray nucleus of the spinal cord into centrifugal, reactive nerves, which manifest their action in these organs. Thus reflex arcs originate, by whose arrangements this transformation into reaction nerves can occur and likewise affords the possibility that such reflex arcs are always able to be constructed one from the other, whose efferent and afferent portions are always rooted in or to like named portions of that arc from which they have been developed. That has now actually happened with respect to the brain and likewise the cerebrum. For it represents, as we have seen, merely the closure arc, which exists between the elements of the corpora quadrigemina coming from the periphery in the last instance and the components of the corpora striata finally terminating in the periphery. The nerves originate on the internal and external surface of the body, as well as in the organs lying between them, *e.g.*, the muscles, as so-called sensory nerves, pass up to the corpora quadrigemina, from there go through the cerebrum and then, what is of the greatest importance, through the gray matter of its cortex to the corpora striata, from there descend to the places, organs, from whence they came, and terminate in their most minute parts, by whose action the function of the whole organ is manifested.

Still, to awaken to misconceptions, the nerves, their axis cylinders, as their most important components, are threads of protoplasm. From the protoplasm a number of formative cells, which at a certain period of the process of

development are arranged in rows, have produced them, the centripetal, receptive, as above shown, from the periphery to the central organs, spinal cord and brain, the centrifugal, reactive, from these central organs toward the periphery. Protoplasm in itself is a very unstable body, in so far all movements, which effect it, to the smallest of its components, its molecules and their atoms, are immediate and appropriate and thus produce its so-called vital properties. These last movements we call molecular and atomic motion; of these we know that they can increase and be transformed into molar movements the ordinary mechanical processes, which we are able to sensibly perceive as such, while we merely infer the former from their results. Movements, which we are unable to sensibly perceive, but must admit as existing from certain of their effects, are termed forces, and those of these forces, which act on protoplasm, or through it, irritants.

The movements of the world, which we are unable to sensibly perceive, of which we know however that they are the basis of chemical action, light, heat, electricity and magnetism, are the principal irritants of the nerves, nervous system. Their relative movements cause an appropriate chemical movement in the ends of the receptive nerves; this is conveyed wave-like in the direction of the origin of the nerves and those connected with them, *i. e.*, by their axis cylinders, so in the receptive nerves centripetally with respect to the centre, *i. e.*, the central reflex arc, whereas in the reactive nerves centrifugally. The irritations of the world, the movements of the universe, hence put the nerves, especially their axis cylinders, in motion and through them the whole body. These nerve movements begin in the apparatuses for the reception of irritation, the sense organs, as chemical, atomic movements, proceed along the centripetal, receptive nerves with an average rapidity of 60—90 m. per second, in the centrifugal, reactive, never more than 30—33 m., and in the deposit of the gray matter between the two, where they are always inhibited, with a still lower rapidity, to finally be transformed in the organs where the centrifugal nerves terminate, into molecu-

lar movements and through these into molar movements, as such they again return to the universe from whence they came. The chemical, metabolic processes, then manifestations of heat, electricity, occasionally light, finally growth, glandular action, muscular action, mere contractions as entire acts, are all evidences of this. All living beings provided with nerves behave like puppets, which dance, *i. e.*, move, to imperceptible forces, tracks of irritation, when the irritants act on them which are conveyed to them. In vertebrates and man these irritants, if they pass through the cerebrum, particularly its gray cortex, are conscious.

How does this happen? Unfortunately we do not know! As we are forced to assume that consciousness is something inherent in the material of the creature, like all the rest of its forces and so came from the universe, as we naturalists, physicians, comprehend it and its manifestations, which we always merely perceive in connection with the rest of the manifestations of the world, will only comprehend it in a slight degree. However, what happens, when it is produced, when it is active, which had previously been latent, restrained, and is now free, can be determined.

The beings provided with a definite consciousness evidently begin life as an independent creature with a certain degree of it, *i. e.*, are born with it, when all pertinent conditions are considered. Vertebrates and, of them, man, which, especially the latter, are here alone concerned, are born as conscious and, at least to a certain degree, self-conscious beings. During their embryonal, their foetal state they have had their experiences, and from the first moment that certain of their irritable formative cells became capable of feeling, sensitive in the ordinary sense of the word, they have become more and more and so better and better, plainer and plainer, acquainted with the different effects of irritation on them, *e. g.*, the collective and collateral, as well as the successive. But on the collective and collateral effects of different irritations depend the ideas of space, and on the successive, those of time. It has always been claimed, and, as I know, among others by Kant, that the ideas of time

and space are congenital in man. They are in my opinion; this is due solely to the fact that man, like every animal, particularly vertebrates, meets with experiences, on which they are founded and conditioned, before birth, as a foetus, embryo. He develops under their influence, grows and matures with them and is therefore born with them. Consider the shark moving in its egg, as this is observed from time to time in large aquariums; consider the chick in the egg, as it becomes ever more cramped by the shell, finally picks its way out; then the so-called movements of the child which are performed by the human foetus weeks before birth, at first superficial, slow, sluggish, then with every week becoming more numerous, quicker, more energetic, more plainly visible, first here, then there protruding the mother's abdominal walls, because it first here, then there pushes against them and they, as well as itself, are pressed upon; when all this is considered, it must be involuntarily said: It can scarcely be otherwise; at least that is the simplest explanation, as the origin of time and space occurs, as well in and of themselves, as also in so far as they seem congenital.

On the ideas of time and space depends the idea, the feeling, sensation of being something in time and space or, perhaps better, something special in time and space, different from the causes, influences, processes determining them, outliving them, of another kind, existing for itself, independent, in short a self. On the ideas of time and space then depends the self-feeling, the feeling of being a complete whole, an individual, a person, an *ego*. In a certain measure it must be universally developed, where the former have been developed, and, as the ideas of time and space are congenital, so it cannot be otherwise with that, being a self. It may be very weak, dark and vague, a very feeble, indefinite feeling; still present, I might say, it must be. How otherwise could it be understood that the chick, duckling, gosling, but a few hours out of the egg, moves about nimbly, seeks food, like its mother, which has brought it into existence; how could it further be explained that the guinea-pig just born securely trots about and feeds on the

grass, which it sees its older companions eating, and in some cases when the mother is dead, acts in this way? The mare, cow, goat, ewe or sow, the bitch, cat and others of the kind, might offer the new born young their udder; that these press forward and seize the teats, in which perhaps a sort of chemotaxis co-operates in the form of odor and smell; it might be that an aversion is felt by all these young for their mother and her udder, that they feel as a self in the presence of her and her milk, which can only be doubted by those who doubt their own existence. And as in animals, so it is in man also. Man is also born a conscious being, conscious of himself. This consciousness might be merely limited to a vague feeling of itself; might it be ever so indefinite and mean, it cannot be wanting. Where pain and pleasure are felt, consciousness must be present and pain is surely felt by the new-born when it cries. The first cry of man is one of pain.

On this being, conscious of itself, act the forces of the world, those of the universe, like so many irritants. On its external and internal surfaces, as well as the organs connected with them, they are manifested. By the nerves ascending from them to the brain, as the organ of consciousness, they are conducted to it and then felt according to their kind, as pressure, heat, light, sound, odor, taste, hunger and thirst, as desires to defecate and urinate, motor impulses, etc. But the effect of all these irritations on the organ of consciousness is to produce a state of excitement in it, which is felt as so-called general feeling, is known as general feeling, the existing sensation in itself is pleasant, it is pleasure; if the existing perception, perception itself is unpleasant, painful, it is a pain, respectively displeasure.

Of these processes, conditions, the conscious life, which we ordinarily term mind, is generally composed. For mind is nothing else than the something which makes the living beings and with them man, conscious, self-conscious creatures; the expression *soul* is used more with respect to the mere feelings and particularly the general feeling as to pleasure and displeasure, and the expression *mind* more

with respect to definite perceptions and their comprehension. In this connection almost without exception we employ the word *soul* especially with respect to mere affective life, which we also term emotional processes, as you like, and the word *mind* with respect to clear ideas which we call intellectual processes, understanding. When we will avoid such a comparison and presume nothing, we then often use the expression *psyche*, particularly in scientific circles.

What has transpired in the affective life, what in the mental life and hence in the intellectual, in the psychical life, is readily repeated as soon as a sufficient impulse recalls the special chemico-physical process on which it depends. This fact is the basis of what we call recollection, what we call memory.

From all these processes and especially from their co-operation, so far as this occurs among them, is produced an ever stronger and clearer consciousness, especially self-consciousness. This creature is ever more, ever clearer, more definitely conscious of itself, as something complete in itself, as a whole existing for itself. The sense of individuality, personality, the ego takes root; the ego, its ego feeling perceives, *i. e.*, recognizes itself as such, as something special, peculiar.

On this ego now depends all emotional, all mental processes; on it depends the determination of the mental, or as is usually said, the moral stamina; on it depends in the given case whether mental health or mental disease exists. This ego, and in its entirety, must be diseased if we can and will speak of a mental affection; otherwise we should, as it happens in ordinary life, speak of its morbid states, which can affect it and make it ill in its entirety, which have not as yet so far affected, pervaded it.

The ego is a feeling. It is the total of all the feelings which have contributed to its formation, and so it is the sum* or product of the feelings which have at any time effected it. It is therefore never the same, but changes every moment. However the larger the number of ideas from which it has been formed, the less is the change it undergoes by the addition or subtraction of several new or

old ideas. It then seems to possess a certain stability, solidity, completeness and on the whole under definite conditions is always manifested in the same, definite, characteristic manner; it presents character, is a character. Whereas the fewer the ideas that entered into the formation of the ego, although many have perhaps cooperated in the course of time, because only a few permanently adhered, and the majority, displaced by new, repeatedly succumb, the ego is weak, very changeable, lacking in a special stamp. It lacks all character, is characterless. Dependent on every irritation, which effects it according to its degree of intensity, it changes every moment; it appears unstable, easily effected, hence undisciplined, profligate, a dependent, respectively a go-between, an instigator, morally insane, whose occurrence has recently been disputed, but nevertheless as certainly occurs as morality and propriety. In the latter case the ego is decidedly out of health, and the more and surely so as the more readily changeable it is, because of its rickety constitution. The ego is always changeable, the permanent, so-called normal, but changes gradually; if it changes easily and at every moment it is unstable, irresistible, frail and hence diseased, at least morbid. As a feeling the ego cannot well be readily diseased. Of affective diseases, emotional diseases, mental diseases, which latter are only definite forms of modification of the first, and consequently to speak of diseases of the ego is, correctly considered, real nonsense. Still it happens very generally, and every one knows well what he is to understand by these expressions. For mutual understanding in ordinary daily life they are therefore very applicable; but how about it scientifically and where clearness as well as distinctness is desired? In all such cases the persons concerned must be conscious that all these so-called diseases are merely functional derangements in consequence of disorders in the functioning body, *i. e.*, what we otherwise call it in consequence of disease. The fevers in themselves are not diseases, although they are called such, as *e. g.*, the expressions hay fever, intermittent fever, tropical fever, hospital fever, etc., prove; but they are nutritive changes,

respectively the organic changes produced by them, and these have produced the fever. But the fevers are merely symptoms of diseases, yet not such of themselves.

It is the same with regard to dropsy, jaundice, diabetes, dysentery, etc. They are all in and of themselves merely symptoms, not real diseases. The diseases, which are indicated by dropsy, are those of the heart, liver, kidneys, nerves, especially in the vasomotor nerves. Jaundice is a symptom of liver diseases especially, diabetes, of nervous disease and dysentery, of intestinal diseases, particularly of ulcerations. What then are the diseases at the basis of the so-called mental diseases, affective diseases, diseases of the *ego*, psychical diseases?

Except fever, pains in the head and limbs, digestive disorders, disorders of sleep and other general conditions, except these derangements or symptoms, which are found in every disease and originate in very different localities, respectively in very different organs of the body, the chief, the most significant of the disease concerned, the symptoms the most characteristic of it, arise at the place of the disease, then in the organ diseased. So the symptoms especially important for cardiac diseases originate about or in the heart, those the most characteristic of lung diseases in the lungs, those of liver diseases in the liver, those of kidney diseases in the kidneys. The most prominent symptoms of urinary and sexual diseases are developed in the bladder and genital organs, those of certain diseases of the spinal cord and brain, like many pains, losses of sensation, anaesthesias, like many contractures and palsies, motor disorders chiefly, in the spinal cord and brain; so it is thought that diseases symptomatic of the mental, affective, psychical, which together I have briefly named diseases of the *ego*, that the real diseases at the basis of these must have their seat and be manifested where the *ego* is formed. The cerebrum, particularly the brain mantle, the gray cerebral cortex, which we have become acquainted with as the organ of consciousness, of the *ego*, should consequently be their seat. In mental diseases or, as he calls them, psychical diseases, Griesinger says we have to recognize

diseases of the brain, and later writers claim mental diseases are brain diseases, or, more strictly, diseases of the forebrain.

All that is correct to a certain degree. Yet on it depends what is understood by disease, diseases. If the gross, readily perceptible changes are implied, which we usually term material, organic, or those sometimes produced by poisons, which may still always be ascertained, if by various expedients, I do not know what counter proof may be employed; but if the states of enfeeblement are implied, which are manifested by a certain lack of resistance, a certain liability of balance in behaviour and character, as we have occasionally referred to them, much opposition might be raised. If every state of enfeeblement is regarded from the purely physical, purely biological and therefore from the purely scientific standpoint, because it depends on an implied and hence defective development, as well as excludes a further favorable development, and entails a more or less marked deficiency, every state of enfeeblement is thus to be considered from this standpoint as due to a morbid condition, disease, extinction, still it is not a disease in itself. It facilitates the origin of such a condition, disposes to it, perhaps represents its first incipiency; however a disease as such it is not. Incomparably more than to real diseases, so-called material, organic changes such a state of enfeeblement disposes to functional, physiological changes when adequate irritants, *i. e.*, those altering function, act upon it. At any rate, when such functional changes occur, which depend solely upon atomic and molecular movements, the material or organic changes are developed in time as expression of molar movements; still ere that occurs a certain time elapses, and other irritants may be active and have other effects.

Therefore according to our description it is in fact correct that mental diseases are due to diseases and morbid states of the brain, particularly of the cerebrum or forebrain and its gray cortex, yet by no means by these alone. Morbidly constituted and hence weak, resistless must the brain always be and particularly the cerebrum or forebrain, as

organ of consciousness, ideas, the ego, when a mental disease occurs, a mental disease can be developed; yet, if the latter actually happens, its cause may be entirely different. And reflect how the ego was originated, that it has been produced by the effects of irritation from the world on the body and its organs, and by these facts again as special irritation to the organ of consciousness, *i. e.*, by ideas, especially feelings, which are induced in it by them, that the *ego* has been formed in a certain measure from the reports, respectively information, from the body and the reception they receive in the individually differently constituted organ of consciousness and hence consciousness itself. Further, as all individuals belonging to a definite group of creatures, to a definite group of vertebrates and hence man, possess on the whole the same organization—because they possess the same organization they therefore represent a special group in their phenomena—and as with this organization they possess the same arrangement of the nervous system, so their consciousness and especially that of themselves, then their *ego* feeling, is on the whole the same. These qualities, which, if presenting a certain, slight difference in their development, are still always met with in all the individuals of a definite group of living beings, are called their existence, their health, briefly normal. The *ego* feeling which is manifested in a definite group of living beings, particularly man and other vertebrates and which we recognize in their character, we consequently name the *ego* feeling, respectively *ego*, is normal to this group. It is the result of the effect of regular, daily irritants on the nervous system, in general similarly constituted, and particularly the organ of consciousness.

But now it is different, irritations, enfeebled by too frequent occurrence, act without uniformity, first very intensely, then relatively weak; the nerves, changed for some reason or other, conduct the same impulses differently than usual, too rapidly or too slowly; the morbidly constituted and hence weak and resistless, easily paralyzed organ of consciousness receives them in accord with its constitution, it perceives the unusual irritations, which effect it, in

an unusual, especially too violent or too feeble, manner and, as any violent or so-called dull pain teaches, more or less strangely, unpleasantly, the ego apperceives relatively new ideas in a way not unknown to it, with great pleasure, displeasure or indifference, in short, in an unmistakably changed manner, unmistakably changed character, then it is diseased, and without being able to prove that it is based on a real, material or organic disease of the brain, respectively forebrain. The individual is then mentally diseased, is insane or, however else we may call it, and is then in and of itself wholly indifferent whether it is an animal or a man. For a corresponding change of character also occurs in animals, and change of character is generally the surest sign of mental disease, is the surest sign of a mental disease, an insanity.

And all that can be without our being able to discover, respectively prove, the reason, cause. It is usually nothing else than a mere functional change, a so-called functional disorder or functional disease, which, as we have already seen, depends on changes in the fundamental atomic and molecular movements, of which we further know that they may be transformed into molar movements and the mere functional disorders into material ones and the functional diseases into organic, but which, namely the latter, when we find them, are not the causes of the existing disease processes, but rather their terminal states.

Still I must emphatically say it is not always so. There is a large number of mental diseases and mental disorders solely the result of diseases of the brain; they are the so-called idiopathic or, as they are called, without material foundation; yet a much larger majority are without them and only occur in the way previously described; they are the so-called deuteropathic or without demonstrable material foundation. They form, as stated, by far the largest number, and on this fact the older alienists in their time advanced the proposition; mental diseases are merely brain diseases, which in a certain degree was raised to a dogma. No, mental diseases are not only diseases of the brain, but rather of the whole person. Mental disease may now and

then be the sequel of brain diseases; still they are especially the sequel of diseases of the whole individuality, which manifest them through itself.

But that largely depends on that which we have learned as to their nature. The ego appears changed, morbidly changed, diseased even, because irritations, differently constituted than formerly, morbidly changed, produced by disease, have acted on it. And that forced us to the assumption, which I find confirmed daily, and which anyone ever so little experienced will also find confirmed, if he can and merely will see that all diseases of the body, whether more of a general or more of a local nature, that each of these diseases are, respectively can be, the cause of a mental disease, of insanity. Rheumatism, gout, typhoid, cholera, influenza, malaria, every pulmonary inflammation, cardiac inflammation, every disorder of the stomach, intestines, liver and kidneys, the diseases of the bladder and genital organs, of the subcutaneous cellular tissue and also periosteal inflammations, tenosynitis, so-called paronychia and dental abscess, can in this way be the cause of a disease of the ego, of insanity; it is essential that the individual be predisposed or, as is usually said, disposed. For if he is not, this lacking the proper disposition, he does not really become ill mentally; he goes through life safely, meet what he may; yet if he is disposed and strongly disposed, in a high degree, any disease which attacks him is only too often the cause of his mental disorder. Even the temporary demands of development, as, e. g., the accelerated growth at the period of puberty and immediately subsequent to it, then become such a cause, and unfortunately with it then a permanent mental debility for the balance of the life.

The disposition repeated referred to, as has been stated previously, consists of a more or less greater weakness and lack of resistance in the individual concerned. Arrests of development in consequence of a hereditary constitutional weakness, inadequacy of the so-called *nitus formativus*, are to blame. In all such individuals the vascular system, together with its contents, the blood, and the nervous sys-

tem, are especially weak and frail, because to a certain degree immature. Both are too small and immature for the body and hence are physiologically inadequate or defective, faulty. These persons are both chlorotic and neurasthenic.

Chlorosis and neurasthenia mutually condition and together constitute the chloroso-neurasthenic constitutional anomaly or diathesis, which is a degenerative state. Even though it occurs frequently, daily, it is nevertheless a state of degeneration. Where we find it we have degenerated individuals, and according to the degree it has attained, whether mildly degenerating or profoundly degenerated. The chloroso-neurasthenic diathesis is therefore to be considered very momentous as the chief sign of degeneration, and the more so as its bearers generally present many other degenerative states, as signs of their general degeneracy.

And so then we come to the conclusion that it is only degenerates who are mentally diseased, and that the mental disease which affects them is merely a sign of their degeneration. This is also in accord with the theory of so-called hereditary taint, namely the taint with disposition to various severe diseases, respectively incurable debility,

- and especially nervous diseases, mental diseases, mental disorders. Unbiased observation and calm reflection show that the so-called hereditary taint is really nothing else and can be nothing else than degeneration due to heredity, which continues from generation to generation, as Nature, at all times and in all places, teaches.

Mental diseases are diseases of the ego, and the ego is a feeling. The requisite details have been given; anything further in this respect seems to me unnecessary. If that is true and it is realized that the feeling is merely a function, a manifestation of life, then it is only natural that mental diseases will be brought about like all other manifestations of life. The fundamental biological law in fact bears upon it, and especially it is the law of excitement of the exhausted and insensible nerves, as Pflüger became acquainted with it, by which they arise and disappear. They vary from the mildest onsets of a changed ego feel-

ing or, as is usually said, self-feeling, as it occurs in every disease, to the most intense, I might say, falsifications of the ego, when nothing corresponding to the reality can longer be appreciated. The first are not usually included among the mental diseases; the latter alone constitute their real province. However, between both forms innumerable transitions occur, and where this or that case is to be put depends solely on the views and opinions entertained by the experts concerned. Certain cases are always in dispute as to which of these forms they will be assigned, and in Court that will repeatedly present itself to skilled experts.

THE SUCCESSFUL MEDICAL MANAGEMENT OF EPILEPSY.*

By C. H. HUGHES, M. D., St. Louis.

EVERY now and then new treatments, so called, which are only combinations or adjuncts to the bromides, are announced for this affection. Nitrate of Silver, the old remedy, Cyanuret of Iron, the next oldest, lately heralded as new, Atropia, Codeine, the latest, *et id genus omne*, have come and gone. All the bromides and every agent that has shown power to suppress spasm, has at one time or another, been heralded as a cure for epilepsy, whereas no antispasmodic unaided by other remedial resources has probably ever cured it. The Brown-Sequard combination and the Bromide of Potassium of his English predecessor and later combinations of newer bromides—sodium, strontium, ammonium, etc.—have proven the best suppressors of the spasmodic recurrence in epilepsy, but to cure epilepsy something more than suppressing, postponing or modifying the explosive paroxysm must be accomplished. To restore the idiopathic epileptic, the victim must be made anew, the epileptic habit and its underlying neuropathic substratum must be corrected and to cure epilepsy in any of its varying forms, the Jacksonian, traumatic, post-febrile, syphilitic, uric acid or other diathetic forms, the whole patient must be treated. The paroxysmal habit must not only be broken, but the causes and conditions which lead to it must be remedied.

The trephine and the toxine, whether autotoxic or coming from without, and the ancestral entailments and present environments, are to be considered in every case. Developing

*Read before St. Louis Medical Society, Dec. 3rd, 1898.

psychical influences and curative impressions—hypnotism—are not to be ignored.

I have seen paroxysms developed and prevented by mental impression. In *La Charite*, I have seen the revolving discs postpone its accesses as those of hysteria are overcome there, and even labor delayed.

In the time of the gospels, it was cured by the psychical power of Christ, as Matthew relates, xvii, 15.

"There came to Him a certain man, kneeling down to Him and saying, 'Lord have mercy on my son; for he is lunatic and sore vexed. For oftentimes he falleth into the fire and oft into the water.' And Jesus rebuked the devil; and he departed out of him; and the child was cured from that very hour."—Matthew, Chap. xvii, Verse 15.

To postpone or prevent paroxysmal accesses in epilepsy is one thing, to cure the causative conditions is another. Only continuous nerve rebuilding treatment and persistent long continued complete suppression of the paroxysmal tendency even in the vertiginous forms of *petit mal* will give hope or prospect of cure and in the best handled cases, only in a small per cent., say not over ten per cent. (as in my long experience), will ever a prolonged appearance of cure be established, *i. e.*, where the treatment may be cautiously reduced and withdrawn after a period of from one and a half to two years of absolute freedom from all manifestation without paroxysmal return long after therapy ceases. It is not even then safe to leave the patient without some daily treatment and the maintainance of medical suppression by moderated treatment for another stretch of time equally as long. My rule is to maintain the bromide impression with a daily dose of thirty grains of strontium bromide, alternately substituting from time to time, the sodium, ammonium, lithium, calcium or potassium, salts, with or without Iodide of Potassium, Arsenic, Quinine, etc., as circumstances require, and always with a reconstructive hæmo-neural therapy and alvine digestives and laxatives, as experienced clinical judgment suggest, remembering always that I have under management an unstable neuro-pathic organism to be re-established in normal stability and

oftentimes an entire personality of body out of harmony with its environments, to reconstruct and restore. The suppression and control of the paroxysmal currency is but one of the indications in epileptic and epileptoid disease, as in hysteria. In both diseases the time for treatment is in the interim of the attacks. Often the sudden suppression of epilepsy establishes or brings out that far worse psychical alternative, epileptic automatism, epileptic mania or insanity in other forms, showing all too plainly that grave forms of epilepsy are not essentially and exclusively the explosive convulsion, but that the physical psycho-motor convulsion finds expression in a pure psychical equivalent, which is an explosion of automatic violence or of insane automaticity of conduct without actual violence, as we see in the so-called larvated forms of this disease. The action of many cases under bromide suppression of the physical paroxysmal form shows therefore quite plainly that the paroxysm is not all there is of epileptic disease. The epileptic change in the brain of these patients that causes its spasmodic, vertiginous, maniacal and other automatic impulsions, the automatisms of epilepsy and epileptoid states alone constituting a large part of the literature of the disease, must be overcome and altered back to the normal before they may be considered as recovered of their malady. When this may be accomplished with the same certainty that its paroxysms or its vertiginous attacks may be controlled, then shall we have a certain cure for epilepsy. No one remedy probably will ever do this, because we have an underlying morbid condition resulting from many different causes to overcome and reconstruct.

In view of these facts and many other familiar to the neurologist, how futile appears such periodic publications as the Codiae treatment, the Bechterew treatment, and those who put their entire trust in them for the exclusive cure of this formidable disorder, do but lean on broken reeds. These treatments usually include the Bromide of Potassium, not the best of the bromides, and cite a certain limited number of cases in which paroxysms have been reduced in number or suppressed for a time, whereas the only test of

a reasonably reliable cure of epilepsy is the ability of the patient to remain free of its recurrence for several years, without being under the influence of paroxysm-suppressing medication. We could name a number of such cases in which the original suppression treatment was Bromide of Potassium with hypophosphites and general rebuilding and therapeutic treatment of the whole patient, including cephalic galvanizations,* and others after many years, even twenty or more, where other bromides alternated, filled the same therapeutic office, but compared with the number treated without cure, though with long time suppression, they constitute a comparatively small proportion. Bechterew's is about the latest new plan of treating epilepsy. It is only an evanescent fad. He is reported as giving to the public the record of eight cases treated for a period of six weeks. I have completely suppressed almost any epilepsy I have ever attempted to treat for that length of time and usually much longer on any one of the bromides alone but particularly with the Bromide of Ammonium or Sodium.

Bechterew combined Bromide of Potassium, Codeine and Adonis Vernalis, and gave the combination twice a day with the following results:

"In four cases there was complete suspension of the fits, in the three other cases the fits were replaced by infrequent attacks of vertigo, and in the last case there were four attacks of vertigo and two convulsions. In each case the attacks were very much reduced in frequency; no bad results were obtained. The digestion was not impaired.

*I claim to have originated the practice of regular cephalic constant current electrifications for restoring normal conditions in the epileptic. Many years ago I was laughed at by members of this society, but not deterred thereby, for my enthusiasm as to the adjunct value of this important therapeutic resource and for my enthusiastic faith in the curability of a certain proportion of cases of this disease.

In a paper read at Toronto, Canada, June 14th, 1881, before the American Medico-Psychological Association and published in the ALIENIST AND NEUROLOGIST for January, 1883, entitled, The Therapeutic Value of Cephalic and Spinal Electrization, my views on the electrotherapy of the brain in Epilepsy and other morbid cephalic states are fully shown, as well as the physiological experimental results of Laborde, Condorcet and Duval on animals. In that paper is also put forth the experience of Althaus with this agent in resolving "morbid depositions within the brain" and in the cure of diabetes Insipidus, melancholia and auditory delusion by applying the current respectively to the medulla, the occipital lobes and Ferrier's Auditory centers in the superior temporo-sphenoidal convolutions, with our own clinical confirmations.

the pulse was fuller, the temperature normal, diuresis increased, sleep uninterrupted and calm, the mental condition unchanged. The author believes the results were due to the combination of drugs, not to the bromide alone."—De Cesare (*Rif. Med.*, August 13, 1897), *British Medical Journal*.

Now this is not such repression even as I am accustomed to secure almost habitually in all my cases whether they finally recover or not, and I have had a number of cases to recover when put on a course of Bromide of Sodium, alternating with Bromide of Strontium, Ammonium, etc., and combined with pepsine, pancreatin, laxatives, largely milk, vegetable and bread and lean meat diet, and neurotic reconstructives, and go out from under a three or four years' treatment without ever having a second or third or fourth paroxysm from the time treatment was begun in earnest with them. The returning vertiginous sensations are as ominous and foreboding of failure as the recurrence of the convulsive paroxysm. Recent fractures are to be trephined, old ones may be explored but they are not hopeful, syphilitic conditions treated, and when epilepsy appears for the first time in middle life without a history of traumatic cause and not following the eruptive fevers, syphilis may be reasonably suspected.

Such announcements as those of Bechterew show the novice in the neurotherapy of epilepsy. There is no safety or assurance of cure in either grand or petit mal where a sign of the spasmodic neurosis appears after treatment is begun. To be safe all expression of the disease, convulsive, vertiginous or automatic, must be wholly suppressed and kept so, pending the reconstruction of the underlying morbid substratum which determines paroxysmal manifestation.

Combinations of the bromides with Cannabis Indica, Chloral, Codiae, etc., which modify and partly suppress the epileptic spasmodic explosion, add nothing to our simpler armamentarium and but encumber the already over-burdened literature of this subject with superfluous rubbish.

Neurotherapy in this affection has passed the period of paroxysmal control and modification of the epileptic status.

Glonoin, Nitrate of Amyl and other inhalents, rectal Chloral enemata, and the bromides blended with narcotics, have all been duly rated in Neuriatric judgment. What neurology yet seeks to discover is a cure for the brain change that makes the epileptic or epileptoid symptom display, not new combinations to control either the vaso-motor or psycho-motor spasm or the morbid impulsions of epileptic disease. This knowledge is coming to us in what we are learning of the treatment of neurotherapy in general and neurotic individuals in particular.

I am inclined to attach a good deal of importance to the auto-toxine theory of the excitation of the epileptic paroxysm and to engastric and lower intestinal and septic irritative conditions as causative factors of epileptic paroxysm, but not of the epileptic predisposition in the brain.

The reputation that nitrate of silver once had in the treatment of epilepsy was acquired, I think, by its property of destroying intestinal toxines. It is still good for that purpose. The first case of monthly recurring grand mal paroxysm I ever successfully treated in the beginning of my career, was apparently cured by a principally milk and porridge diet, the Argenti Nitratis and open bowels. This young man was fond of a mixture of one part beer and two parts milk, which I allowed him to take moderately every day. He recovered in 1859 and 1860 and has been well ever since. When nature fails the mineral acids and proper intestinal antiseptics are necessary, in my judgment, to recovery of any case of epileptic or epileptoid disease. The rational management of epilepsy consists, as already intimated, in treating the entire patient by all agencies and every environment, mental or physical, which will exalt the patient's nerve tone, improve his nerve stability, especially in the psycho-motor areas of the brain and promote his general welfare. Prof. William Pepper has recently reported a case (*Southern Practitioner*, vol. xx, no. 2) successfully treated for eight years with Antipyrine and Sodium Salicylate, and I have certainly cured epilepsy and paralysis both in isolated instances with quinine and salol, once, a child's paraplegia simulating polio-myelitis anterior with quinine,

and have often cured epilepsy coming on in adult life with protiodide of mercury, potassium iodide and the bromides.

Every form of toxæmia calls for removal in the treatment of epileptic disease, just as much so as the gummatæ of syphilis, the depressions or osseous spiculae of cranial injury, reflex influences or cardiac disturbance.

While the symptom complex is comparatively simple, in grand mal, *viz.* a characteristic trinity of unconsciousness, convulsion and recurrency, its etiology is often a complex problem taxing all clinical resources. Lithemic, gouty, neuropathic, syphilitic and malarial, states, etc., all present matter for consideration in the study of epilepsia and epileptoid disease.

To know epilepsy well is like knowing rheumatism, gout, syphilis and the neuropathic diathesis, etc., well, and to know these well, is to know very much of the broad field of clinical medicine.

It must be plain, then, that the alternation of the bromides, the blending of them, the employing of them singly, the immunizing of the *primaæ viae*, the perfect digestion of its contents, the regulation of the whole organism back into physiological channels of action wherever it has gone awry, constitute the scientific and clinical rationalé of the treatment of this grave disease, for very much is wrong when the cerebral inhibitions can let the brain go into coma and convulsions and the alternative psychic states of epilepsy. A weakened vaso-motor mechanism and stricken consciousness or psycho-motor center disturbance fraught with after consequences involving the after mental stability and integrity of the individual, the degeneracy of offspring and often the safety and life of others about the victim, are involved in the question of the management of this disease in its various phases. Our success depends upon the proper management of the convulsion, while failure is likely to follow the exclusive treatment of the convulsive features of this disease, for it also has vertiginous, somnambulistic, automatic, psychic and impulsive alternative aspects and an underlying cerebropathy and a neuropathy often involving more than the brain in disease.

ADDENDUM.

In the discussion of this paper before the St. Louis Medical Society, Dr. Geo. I. Stevens' and Ambrose L. Ranney's marvelous claims of success in the treatment of this disease through rectification of errors of refraction, etc., in the eye, were cited and the following record was given from Stephens: Out of twenty-six cases, seven were pronounced cured, nine ameliorated, three practically cured, three not cured and four not counted. Of the three not cured, two had floating kidney. Now here are seven cases pronounced positively cured and nineteen of them not cured, yet the doctor includes all of these but three in his net of cures, though he pronounces only seven as emphatically cured.

Floating kidney accounts for two cases not being cured, but floating kidney is not an ordinary cause of epilepsy. Like any other condition external to the brain but in nervous communication with it, floating kidney may be an exciting cause. But more people with floating kidney are found without epilepsy or other neurosis than with this anomaly.

We would suggest if Dr. Stevens would trace up his cases with a neurologist's and an alienist's knowledge of the alternative states epilepsy assumes, its epileptoid, somnambulistic, automatistic, maniacal, impulsive, procreative, and other psychical equivalents and alternative states, as nocturnal epilepsy, which supplement and substitute grand mal under new environment and psychical impression, he would not be so positive about the value of eye treatment in the cure of epilepsy.

Visiting a distant city under the influence of expectancy and new psychical impression may postpone or alter paroxysmal manifestation in kind and time, and the removal of irritations through either the eye, the ear, the nose or other sense, or of peripheral disturbance elsewhere as genital, rectal, laryngo-pharyngeal or cutaneous, may and does ameliorate, postpone or alter the paroxysms sometimes and all extraneous disturbances communicating with the brain should be removed in the treatment. A diseased rectum

or bladder, a flatulent bowel or stomach, deranged cata-menia, ulcerated cervix, damaged ovary or any organ, ought to be corrected in any rational plan of treatment, but the *casus epilepticae* is neither in a diverted nasal septum, damaged accommodation or uterine trouble, though each may act as exciting or developing cause of a paroxysm. These ophthalmologic gentlemen, Messrs. Stevens and Ranney are troubled with mental obliquity on this subject. Their errors of mental accommodation prevent them from duly considering all the facts. They are exophoric in their logic and leave out some of the clinical features in their calculations of this multiform display disease. They see only with ophthalmic vision and confine themselves too closely to the range of their perimeters. The neuro-psychiatrist does not see epileptic cures as they discern them. One of my melancholic patients went once to Dr. Stephens to get his eye trimmed (as he called it) and after the first operation came back, saying he was going to get well. He went again for a second operation, and in the mean time came out from under the codeine, nux vomica, phosphorous, etc., which I had given him, and in a resistless morbid impulse of depression, shot himself on his return home, at Chicago.

To avoid lengthening the paper into a book and because it is not a kindergarten effort for kindergarten pupils in neurology, I contented myself in the body of the paper by saying that the whole patient is to be treated all over wherever a remedy of any function or removal of any irritation is required, in the successful management. This includes the correction of all errors of refraction, whether they precede or follow the neurotic causes which make the epileptic habit, or are developed by and from the evolutional neuropathy of epilepsia or epileptoid. The latter being most usual. The same is true of the so-called eye migraine. We have no objection to dividing our work with our ophthalmologic friends, but object to surrendering to them the whole field of neurological medicine.

In the discussion of this paper the habitual use of glonoin as a continuous treatment was advocated by my friend, Dr. Given Campbell, not as a mere aborter of parox-

ysms. This method of using glonoin should have further attention bestowed on it. It may be possible to so employ it as to supplant the bromides or often supplement them. It ought to be a valuable resource in intractable forms of cardiac epilepsy, the most unpromising of all epileptic conditions.

DEGENERACY AND MARRIAGE.*

By EUGENE S. TALBOT, M.D., D. D. S.

Fellow of the Chicago Academy of Medicine; Professor of Dental and Oral Surgery, Woman's Medical College, Chicago, etc.

In that point so precise in each degree
That they bred in and in, as might be shown,
Marrying their cousins—nay, their aunts and nieces,
Which always spoils the breed, if it increases.

BYRON has thus sung of the old popular belief in the advantages of cross-breeding, which arose originally in the practice of exogamy (marriage outside the tribe), or, more often, outside those having the same totem, or coat-of-arms. In all probability, casual observation of deformities after intermarriage enforced the prohibition which arose after the killing of female children had led to exogamy. Totemic relationship was often far from being consanguinous. The idea of incest, as Byron's stanza denotes, is of religious origin rather than innate. Its original nature was often removed by priestly dispensation in Latin countries. From this practice sprang the medical, theologic and legal notions to which D. Hack Tuke thus refers:

The danger arising from marriages of consanguinity has been insisted upon from time to time by medical writers, and has been recognized by ecclesiastical authority, civil law, and by popular belief. As regards ecclesiastical and civil law, it would be more correct to say that the marriage of those very nearly related has been forbidden on other grounds than that of the alleged danger to mental health. At the same time the justice of such laws receives support if medical observation leads to the conclusions that consanguineous marriages tend to generate idiocy and insanity."

*Chapter IV of Degeneracy: Its Signs, Causes and Effects: being the forthcoming Volume XXXVI of the Contemporary Science Series.

The biologic evidence from experiments of Maupas on parthenogenesis elsewhere cited, are seemingly supported by the results of animals breeding in-and-in. The evidence advanced against such marriages seems at first sight exceedingly strong from a biologic statement in man. Rilliet cites cases tending to show that consanguineous marriages in themselves pernicious, tend with certainty to lower vital force. The effects he divides into two categories; those which relate to the parents under which head are:

- a. Failure of conception.
- b. Retardation of conception.
- c. Imperfect conception.

Those which relate to the progeny:

- a. Imperfections of various kinds.
- b. Monstrosities.
- c. Imperfect physical and mental organization.
- d. Tendency to diseases of the nervous system, such as epilepsy, imbecility, idiocy, deaf-mutism, paralysis and various cerebral affections.
- e. Tendency to strumous diseases.
- f. Tending to die young.
- g. Tendency to succumb to disease which others would easily resist.

C. H. S. Davis, of Meriden, Connecticut,* states that intermarriage in families leads to a degeneration that manifests itself in deaf-mutism, albinism and idiocy.

Isaac Ray is of the opinion that consanguineous marriages repeated through successive generations account for numerous instances of insanity and idiocy occurring in quiet, rural populations of New England, far from the excitement of city life, which are generally supposed to be more productive of mental unsoundness.

S. M. Bomiss, of New Orleans, Louisiana (after giving a report of the condition of the offspring of 580 intermarriages of first cousins gathered mostly by medical men from nearly every State in the Union), says: 2,776 children were born of these cousins of whom 793 were defective, 117 deaf and dumb, 63 blind, 231 idiotic, 24 insane, 44 epileptic, 189 scrofulous, 53 deformed and 637 died early.

While these figures seem very demonstrative, they contain a great many elements of error. One of these is incidentally pointed out by Arthur Mitchell,† who finds that under favorable conditions of life the apparent ill effects of con-

**ALIENIST AND NEUROLOGIST*, October, 1898.

† *Edinburgh Medical Journal*, 1865.

sanguineous marriages are frequently almost *nil*, whilst if the children are ill-fed, badly housed and clothed, the evil may become very marked. He calculates that the percentage of consanguineous marriages generally in Scotland is 1.3, or ten times less than with the parents of idiots. Taking his figures a strong case seems to be made out in support of the opinion that idiocy, among other evils, results from intermarriage. Langdon Down, although his figures are not of so unfavourable a character, admits consanguinity as one of the causes of deterioration.

George H. Darwin concluded from a careful investigation that about 4 per cent. of all marriages in England are between first cousins, and between 2 and 3 per cent. in the smaller towns and in the country; with these he compared the rate of similar marriages among the parents of lunatics and idiots in asylums, and found it to be about 3 or 4 per cent.—not higher, therefore, than in the general population.

Huth* cites instances occurring regularly at the present day among certain isolated communities (St. Kilda, Pitcairn, and Iceland) without apparent evil consequences to the race. Such marriages were (according to Strahan) common among the North American Indians and the South Sea Islanders, people among whom idiocy and other degenerate hereditary conditions were, remarkably rare. These cases, Strahan remarks, deal with peculiarly healthy communities. Therein lies the secret of such intermarriage proving innocent of evil to the offspring. Were such intermarriage common among the degenerates the result would be disastrous.

In 1869 the New York State Medical Society† appointed a committee to investigate the influence of consanguineous marriages upon the offspring. Their results show clearly that if the family be free from degenerate taint, marriage among its members in no way diminishes the chances of healthy offspring. This conclusion is in accord with the findings of recent investigators like Anstie, George Darwin, and A. H. Huth, according to whom there is no greater

* *Marriage of Near Kin.*

† *American Journal of Insanity*, 1869-70.

amount of morbidity or abnormality among the offspring of consanguineous parents than among the children of parents not so related, provided the parents be equally free from tendency to disease or degeneration. With a perfectly healthy stock, as every breeder of animals knows, remarks Strahan,* "in-and-in breeding" may be practised with impunity, but where the stock is tainted with disease or imperfection, safety is only to be found in "crossing."

Where the error lay in the old doctrine, upon which was founded the prohibition of consanguineous unions, was not, as Strahan remarks, in asserting that disease and deformity were more often met with in children of these than in those of other unions, for that is true, but attributing these unhappy results to the mere fact that the parents were related by blood. Over and above the fact that these consanguineous marriages are almost certain to transmit in an accentuated form any defect or tendency to disease already present in the family, there is no physiological reason why such marriages should not take place. Breeders of prize stock frequently breed "in-and-in," not only with impunity, but with marked benefit. But this fact, while going to prove that it is not the mere blood relationship of the parents which induces the degeneration so often found in the children of consanguineous marriages, can but rarely be advanced as an argument in support of the marriage of blood relations. The stock-raiser only permits the more perfect members of his flocks and herds to continue their kind, and for this reason the "in-and-in" breeding is innocuous, just as it would be in the human family under like conditions. But where shall we find the perfect human family? Such families are certainly rare. The laws of natural life have been so strained and perverted that almost every family nowadays has a taint or twist of some kind, and as all such imperfections are transmitted and rapidly deepened and fixed in the family by the intermarriage of its members, it is best that such unions should be forbidden.

Recently acquired characters, whether physiologic or pathologic, are very liable to disappear when the individual

* *Marriage and Disease*, p. 266.

bearing such characters intermarries with another of the same character. The natural tendency is then to revert in the offspring to the normal or healthy type, so that unless the new character be very deeply impressed upon the parental organism it is almost certain it will not appear in the offspring if the other parents have nothing of the character. But when both parents are possessed of the character, whether it be physiologic or pathologic, this natural tendency to revert to the original is often overborne and the character is repeated in an accentuated form in the offspring.

Now this accentuation of all family characters is what must always happen in the case of consanguineous marriages. If there be any taint in the family each member of the family will have inherited more or less of it from the common ancestor. Take the case of cousins, the descendants of a common grandparent who was insane and of an insane stock. Here the cousins are certain to have inherited more or less of the insane diathesis. Even if the taint has been largely diluted in their case by the wise, or more likely, fortunate marriages of their blood-related parents, yet will they have inherited a certain tendency to nervous disease, and if they marry they must not be surprised if that taint appears in an aggravated form in their children. Some of the children of such parents are generally idiotic, epileptic, dumb or lymphatic, and the parents marvel whence came the imperfection. It may be in some cases that the parents, and possibly the grandparent, of the unfortunate children, have not up till that time displayed any outward evidence of the tendency to disease which they have inherited and handed on to their descendants; and, not looking farther back, the parents boldly assert that such a thing as insanity, epilepsy, scrofula, &c., is unknown to their family. They themselves have never been insane; why, then, should their children? In like manner children may be epileptic, blind, deaf-mute, lymphatic, cancerous, criminal, drunkards, or deformed from direct inheritance, and yet the family line be honestly declared to be healthy. Hence the truth of Sir William

Aiken's maxim, that "a family history including less than three generations is useless and may even be misleading." From the foregoing it is evident that the similarity of temperament induced by a common environment, which Strahan would call "social consanguinity," must be a potent factor in the production of all hereditary degenerations. Living under similar customs, habits and surroundings, laboring at the same occupation, indulging in the same dissipation, tends to engender like diseases and degenerations, irrespective of any blood relationship. Hence it not seldom happens that persons not even distantly related by blood are, in reality, much more nearly related in temperament than cousins, or even nearer blood relations who have experienced widely different modes of life. This "social consanguinity" is the great curse which dogs every exclusive tribe and class, and hurries them to extinction. It has aided real or family consanguinity in the production of the degeneracies which have fallen so heavily on the royalties and aristocracies of Europe.

A crucial test of the opposing positions taken respectively in such a positive manner by Bemiss and Strahan would be a family intermarrying extensively, but placed under favoring conditions unlikely of themselves to create degeneracy. Excellent cases of this kind are furnished by Bourgeois* and Thiebault.† Bourgeois gives the history of his own family, which was the issue of a union of the third degree of consanguinity. During the ensuing 160 years there were ninety-one marriages, of which sixteen were consanguineous. All of these latter were productive. There was not a single case of malformation, or other physical or mental disease in the offspring.

Thiebault reports the case of a slave-dealer who died in the year 1849 at Whidah, Dahomey, leaving behind him four hundred disconsolate widows, and about one hundred children. By the order of the king the whole family were interned in a particular district, where reigned the most complete promiscuity. In 1863 there were children of the

* Cited by Ribot, *Heredity*.

† Cited by Huth.

third generation. Thiebault, after verifying these facts, states that at that time although these people were born from all degrees of incestuous unions, there was not a single instance of deaf-mutism, albinism, blindness, cretinism, or other congenital malformation. From these cases it is evident that the position of Strahan is not too strongly taken.

While it is true that "like clings to like," still this does not imply kinship, but it very often implies likeness in mental characteristics. This tendency has been shown to be present in the neurotic by Roller,* De Monteyel,† Kiernan,‡ Bannister,|| and Manning,§ so far as Germany, France, the United States, and Australia are concerned. Bannister puts the statistical proof of this tendency very forcibly as follows: "There are in Illinois, according to the most recent estimates, in round numbers, about 6,000 insane, or one to a little over 500 of the population. Even if we double, treble, or quadruple this frequency to include all that have been or are to be insane, as well as those insane at the present time; it would not appear that there was much probability of two insane persons being married according to any ordinary law of chances. In fact, we find four out of the 104 with insane heredity had both father and mother insane. In one of these cases the insane heredity involved both parents and both grandparents on each side, though in the case of the latter the histories show it only as collateral. Besides these, three patients had direct paternal and collateral paternal heredity, and in one case there was collateral heredity of insanity on both sides. This makes altogether nearly 10 per cent of those with insane heredity with it on both sides, maternal and paternal, and thus favored with a double opportunity to inherit mental disease. If we add to this the instances where, with insanity of one parent, there is reported either

* *Allgemeine Zeitschrift für Psychiatrie*, B. xxvii.

† *L'Encephale*, Oct., 1882.

‡ *Detroit Lancet*, October, 1882.

|| *Journal of Nervous and Mental Disease*, 1883.

§ *Australian Medical Gazette*, 1886.

epilepsy, hysteria, or drunkenness, "brain disease," nervousness of the other, the ratio of double inheritance is over 20 per cent.

The beneficial effects which may result from atavism are, it will be obvious, offset by this tendency of the neurotic to intermarry, thus perverting the principle of atavism to the assistance of degeneracy.

The age of the parent plays a part in degeneracy. Conger* (whose results have been corroborated by Joseph Workman,† of Toronto, and Kiernan† of Chicago) points out that in all degenerative forms we must take into consideration this factor, since it determines the development of degeneracy in childhood. Hereditary taint may be transmitted to descendants as a simple neuropathy, as a neurosis, or as a defect of development reaching even to idiocy. Conger finds the prevailing age, especially the age of the mothers of degenerates, is often between twenty and twenty-five years, and that hence there exists a relation between this age and the greater transmission of degeneracy to the offspring. Marro, who has specially investigated the influence of the age of the parents, both in the normal population and among criminals,‡ finds that among all classes of criminals there is an excess of immature parents (under 26) or senile parents (over 40), and that only but few and these minor offenders possessed a normal number of mature parents (26 to 40 years).

Man between 20 and 25 is in as favorable condition for procreating degenerates as in the very aged. Because of incompletely developed organic development he has been unable to free himself from hereditary taint which he transmits to his descendants, but which in maturer age, through the influence of adaptation, evolution, or education, might perhaps be more or less notably modified. The organism between 20 and 25 is yet incomplete; education has not been able to exert much influence in determining those possible changes which are adapted to modify congenital

* *Il Manicomio*, May, 1886.

† ALIENIST AND NEUROLOGIST, January, 1857.

‡ *La Pubertà*, 1898, pp. 242-60.

tendencies. In a word, the individual between 20 and 25 feels too much the influence of atavistic characters, and too readily transmits to his posterity the brands of degeneracy. Experience has made it well known that the children of the aged readily show degenerate types. Many children of old fathers have undoubtedly inherited all the characters of the weakness of the age in which they were begotten. Old age represents the period of retrogression, of involution, and hence readily transmits the mark of degeneracy. The children of either too young or too old parents, failing to escape hereditary predisposition, may from birth inherit those characters which are proper to incomplete organic development or to the period of involution.

Kiernan has had under observation a Nova Scotian family of Scotch extraction, the mother of which continued to bear children until she was 63 years old. There had been no pregnancy between 50 and 56. At 56 a son was born who had ear, jaw and skull stigmata, and became a periodical lunatic at 25. A son, born a year after, was a six-fingered idiot, with retinitis pigmentosa. Three of the next children (two boys and a girl) became paralytic idiots in infancy. Here the degeneracy was expressed in that tendency to military aneurismal weakness of arteries to which E. C. Spitzka* called attention a decade ago. One of the next children was a periodically sexual invert female. The last child was an epileptic. The children born before the age of 50 were normal and averaged 60 years of age. The association of multiple fingers and hemeralopia is as Darrier† has shown far from rare as an expression of degeneracy. Darrier's cases had the following hereditary antecedents: One father had hemeralopia; one mother had defective vision; a grandfather was blind at 30; a grandfather was blind in one eye, and an uncle had congenital iris coloboma. Only one patient examined did not have hemeralopic descendants. Six patients examined belonged to five different families, all consisting of five or six chil-

* *Transactions International Medical Congress*, 1887, p. 264, vol. v.

† *Archives d'Ophthalmologie*, 1887.

dren, one-third of whom had hemeralopia. Among thirty-five children there were eleven hemeralopes and two (six-fingered) children, who died too young to determine the existence of retinitis pigmentosa. The disease in all began in childhood, and hemeralopia was absent in but one case. J. Matthews Duncan,* Arthur Mitchell, and Langdon Down, have called attention to the influence of premature and late marriage in the production of idiocy. Factors capable of producing idiocy are of course capable of producing less decided expressions of degeneracy.

* *Lancet*, October, 1883.

STATISTICS AS TO THE FREQUENCY OF SIMPLE ACUTE MANIA WITH RESPECT TO ITS PERIODI- CAL FORMS.*

By OTTO HINRICHSEN, Zürich.

MENDEL, in his work, *Die Manie*, eine Monographie, Vienna, 1881, compares "typical mania" with its "varieties" and divides the latter in three ways, by employing as principles of classification: 1. The intensity of the attack; 2. The course; 3. The etiology and 4. The pathological anatomy. So by the first principle of classification, that of the intensity, he gets three types:

1. Hypomania.
2. Mania hallucinatoria.
3. Mania gravis.

Whereas, if he takes the course as the determining factor, he acquires three other forms:

1. Mania transitoria.
2. Mania periodica.
3. Mania chronica.

He then claims it is impossible to define different types by means of the two last differential indications: the etiology and the pathological anatomy. The final results of Mendel's considerations form the basis of four "varieties" of mania:

1. Hypomania.
2. Mania hallucinatoria.
3. Mania gravis.
4. Mania periodica.

Mendel then, as could be expected from his many prin-

*Translated from the *Allgemeine Zeitschrift für Psychiatrie*, Bd. 54, Heft 5, by Dr. W. Alfred McCorn, Assistant Physician at McLean Hospital, Waverly, Mass.

ciples of classification, arrives at no further result than that of placing side by side, according to purely external signs, the different varieties of mania accepted by him. Still nothing is said as to the nature of the disease. This censure applies of course not only to Mendel, but in a certain sense to the psychiater, who has always been essentially satisfied with an encyclopediac description of the conditions, instead of trying to group the psychoses *organically*.

But the opinions of different psychiaters as to the nature of mania differ very widely, for Magnan (*Psychiatrische Vorlesungen von V. Magnan*, Heft VI, *Ueber Mania*, Leipzig, 1893, S. 1) claimed that: "Mania, which we class among the simple forms of mental disorder, is, with melancholia, the clinical entity admitted by all and known to the majority. As much as opinions may vary as to its causes, its pathology, all authors diagnose one form at least, acute simple mania;" while Kraepelin, in the fifth edition of his textbook of Psychiatry for students and physicians (Leipzig, 1896), has taken an entirely different position on the question as to the nature and importance of mania, and has directly disclaimed the existence of acute simple mania.

Irrespective of other details, heretofore two quite different forms have been distinguished with respect to the course and nature of mania: 1. simple acute mania and 2. the typical periodical forms of this disease, which are then joined to the circular forms. The latter, the periodical and circular, are regarded as affecting those hereditarily tainted, while acute simple mania is looked upon as a disease which attacks the normal brain. Cases are always observed, which can in no way be easily classified in the preceding scheme, and so controversies always arise. Many a case is neither typically periodic, circular, nor one of simple acute mania. Such observations seem to have induced Magnan to propose his "*Folie intermittante*." This "intermittent insanity" of Magnan should only occur in hereditarily tainted individuals, but also receives the cases, which, receding from the typical periodic and circular forms, approach still more the acute simple mania. Such cases have now and then been called "recurrent mania." But

Magnan, as far as he might extend the idea of intermittent insanity, was far from wholly eliminating acute simple mania, as Kraepelin has recently attempted. He was content rather to call it a rare disease.

Kraepelin, in the fifth edition of his text-book of Psychiatry for students and physicians, made an entirely new classification of mental diseases, in which he would draw nearer the idea of grouping the psychoses organically. I cannot discuss this classification here. I see in it at least an interesting and worthy effort to advance a step toward this aim and ideal, and limit myself solely to the discussion of one of the questions, which have arisen from this innovation, the question of the existence or frequency of acute simple mania.

Kraepelin divides the mental diseases into: A. Acquired mental disorders and B. Mental disorders from morbid constitution. Under B. then appear those which interest us particularly:

- I. Constitutional mental disorders.
- II. General neuroses.
- III. Psychopathic conditions.
- IV. Arrests of development.

The constitutional mental disorders embrace:

A. Periodical insanity:

1. Maniacal forms.
2. Circular forms.
3. Depressive forms.

B. Paranoia with two sub-forms.

In this classification by Kraepelin a large part of what was previously called functional disorders disappear from the "acquired mental disorders," and acute simple mania in particular passes into the "maniacal forms of periodical insanity." Here then the question of etiology becomes important. Shall we then hold to the former idea that simple acute mania is a disease of the normal brain *accidentally* impaired, or is Kraepelin right in considering all and every maniacal attack as *constitutional*?

To settle such doubts we must appeal to facts by investigating definite material: Is there a simple acute

mania, does a simple maniacal attack terminating in recovery occur in a mentally normal individual untainted hereditarily, or not?

Such an investigation is not easy. It is first of all essential to have sufficient material, which must be subject to observation for the longest time possible, and at best by one and the same observer.

Dr. Delbrück, Privat docent of the University of Zürich, called my attention to the interest which the question of the existence or non-existence of acute simple mania has at present, and referred to the fact that the insane hospital at Burghölzli offers material, which, to examine in this respect, would be remunerative. We have an observation period of twenty-one years. As the diagnoses were often not entered in the books of the hospital in the early years of its existence, we must give up using the material from 1870 to 1875. The number of cases seems large enough to permit a conclusion of some certainty. The requirement that *one* observer should have watched the material, was not complied with. Still only the first four years of this time were under the direction of Professor Hitzig, the balance of the diagnoses were made by Professor Forel. Nevertheless doubts were not wanting from the first, difficulties which justified them, were present soon enough. First of all I must eliminate false diagnoses, hence forms of disease were not counted and included by me, which according to Kraepelin, cannot be allotted to mania, and those within the period reviewed by me must be accurately described and separated from mania. This part of my task could not be easy. I had access to the books of the hospital, to the clinical histories, to conferences and written reports, and in the majority of cases must accept the diagnoses as I found them. Only a few cases in which numerous hallucinations and sense deceptions and a marked confusion were found in the clinical histories, I have excluded as acute confusion. Also other statements of the clinical histories, which naturally present much inaccuracy with respect to the questions advanced at present, caused doubt and hesitation. But still I believe I have guarded against voluntary errors as much as possible.

If such an investigation as this cannot be allowed absolute value, it always has a relative one. If it is added that the questions pending cannot be solved by another procedure, that one is necessarily referred to the actual material and its statistical elaboration, so the effort expended may not seem to be wholly wasted.

Not only "may we argue, formulate a system in words," but, as is known, with numbers also. Therefore I consider it first advisable to exactly outline my method of procedure.

As a starting point for the figures to be gotten, I had the admission book of the hospital. The clinical histories served for the more exact study of the individual cases. Then letters afforded further insight. These informed me as to what happened to the patients after discharge from the hospital. I first took from the admission book of the hospital all cases, which were admitted with the diagnosis of mania, hypomania, frenzy, further all cases denoted as circular and periodical insanity, as well as those of periodical melancholia. Excluded were: 1. All patients who had died or become chronic in the first attack (first attack in the insane hospital of Burghölzli) and then those in the second place where the note was found, that they had been transferred to Rheinau, the asylum for incurables; 2 all non-residents of the Canton or country, for it could not be assumed that they would return to the Zürich hospital in a new attack. By elimination of the non-residents of the Canton and country, those dying and becoming chronic in the first attack and transferred to Rheinau, my statistics afford no idea of the total number, either of those admitted to the Burghölzli hospital with the diagnosis of mania, or of the attacks of mania among the citizens of the Canton of Zürich admitted to the Zürich hospital from 1876 to 1896. But it embraces *all* the citizens of the Canton admitted with the diagnosis of mania, in whom a recovery might be a question. The percentage of patients and certain recoveries and not becoming ill again to the total number of attacks is then still lower than the numbers I attained. My number only expresses the proportion of those certainly

recovered and not becoming ill again to the sum of the cases counted by me. There was perhaps among those who died or became chronic, a whole series of cases, which would have increased the number under my heading—established *periodical mania*.

In the books of the Burghölzli hospital every patient receives a number on admission. If he comes a second time, he is admitted under a new number, a note refers the new number to the old one. So it was the result of my first work on this material that I found a number of patients, who had been admitted to the hospital *two to four* times, while another group seems to have only been admitted *once*. That all cases admitted several times are those of *periodical mania*, was not to be doubted. In what sense I here use the term *periodical mania*, I will more fully explain later. But in regard to those other cases, which had only *one* admission number, it was shown by examining the clinical histories that some had been admitted to Burghölzli, that others had had an attack of mental disturbance, with or without hospital treatment.

It may be asked as to how far I believe myself justified in briefly labeling *periodic*, all cases admitted several times, without more careful examination and certain evidence of their periodicity. For the purpose of definitely ascertaining, whether there is an acute simple mania, a single maniacal attack terminating in recovery in an otherwise mentally normal individual, it is necessary to create two distinct divisions. It must at least be possible to isolate the cases certainly recovered, and to place opposite these the indistinct bulk of those cases in which many attacks have occurred during the life time, which then could be called "*periodical insanity*" in the Kraepelin sense. Whether and how far Kraepelin's idea is authorized, even when the statistical evidence of the non-existence of simple mania (in the Kraepelin sense) is furnished, is naturally an open question still, to go into which, would far exceed the limits of this paper. I limit myself solely to the statistical investigation. For this the evidence is sufficient that all these cases are not to be interpreted as simple

mania in the above sense, and in this respect it was indifferent to me, whether the periodicity is more or less evident, whether the cases were to be called according to Mendel's terminology, chronic mania or true periodic mania. "As periodical insanity," Kraepelin says (*Lehrbuch der Psychiatrie*, V. Auflage, Leipzig, 1896, S. 595), "we call those mental disorders, which recur many times in a life time without external cause." And below on the same page the author continues: "Individual outbreaks of the psychosis are not independent diseases, but merely the outward signs of a constant morbid state, which is gradually predisposed to the attack." Such an idea perhaps better accords with natural circumstances, than the artificial separation into periodic and chronic mania, to which many cases with very irregular attacks cannot be subordinated. The "chronic morbid state" may here be the essential factor and produce the individual attacks independently of external influences. Kraepelin goes still further and will consider this *one* attack the sign of a periodic disturbance, though only *one* attack occurs during a life time. On such a basis naturally every attack of acute simple mania, *i. e.*, every attack of maniacal disturbance, in which I prove that it occurred only once in the individual's life, and who was otherwise mentally normal, could be explained by calling it periodical, *i. e.*, developed on a chronic disposition, and not simple and acute. This idea is supported in part by the rarity of such single attacks, and I have undertaken to prove this by the Zürich material.

My first result taken solely from the admission book of the hospital shows that:

128 patients were admitted only "once,"
129 patients were admitted several times.

Of these 128 admitted only "once," 74 on examination of the clinical histories prove to be periodical in my sense, so that I had in all 203 periodical cases. In ten cases I failed to obtain sufficient information, as there were no clinical histories. They were wholly excluded and not counted at all, and I have also hesitated about three others, because I was convinced that they were not mania, but acute confusion.

The 203 periodical cases embrace: Ten cases of pure periodical melancholia, nine circular and two cases which I found labeled periodical insanity. The 128 or, on deducting the seventy-four known to be periodical, fifty-four cases only admitted once include: One case of periodical insanity and two circular cases. The ten cases of periodical melancholia mentioned, in no way show the total number of periodical melancholiacs admitted from 1876 to 1896. A more thorough investigation, as I made in the cases which are not recorded in the admission book, but entered in the clinical histories and shown in their report to be *all* melancholiacs, not apparently periodical at the first glance, will probably afford greater results.

I first give my cases according to the number of *patients*. The number of patients examined is 257, of whom 98 are men and 159 women. Admitted in the first decade: 55 men and 104 women, in all 159 patients. Admitted in the second decade, which is exactly eleven years; forty-three men and fifty-five women, in all ninety-eight patients.

Of these 257 patients admitted once and several times with the diagnosis of mania, there were:

1876-1885: 52 men and 97 women.

1886-1896: 37 men and 47 women.

1876-1896: 89 men and 144 women, in all 233 patients.

In this compilation are included all those admitted with the diagnosis of mania, on whose admission the diagnosis of hypomania, mania, frenzy occurred once or several times, if on other admissions different diagnoses are made. Other diagnoses to be mentioned are: Melancholia, delirium, hysterical insanity, delirium tremens, circular psychosis, paranoia, periodical insanity, moral insanity. I will give the numbers later.

Whereas if I take those cases in whose course in each new attack, what is here equivalent to each readmission, the diagnosis of mania is also given, I obtain the following figures:

Patients with *pure periodical* mania:

1876-1885: 18 men and 27 women.

1886-1896: 10 men and 8 women.

1876-1896: 28 men and 35 women, in all 63 patients.

The number of patients with pure *periodical melancholia* is:

1876-1885: 3 men and 5 women.

1886-1896: 1 man and 1 woman.

1876-1896: 4 men and 6 women, in all 10 patients.

And to complete the picture, the cases in whose course the diagnosis of mania and melancholia alternate, there are:

1876-1885: 0 men and 9 women.

1886-1896: 3 men and 3 women.

1876-1896: 3 men and 12 women, in all 15 cases.

As to the kind of alternation, I am unable to say anything as to these fifteen cases. It seems to be completely anomalous. To be better acquainted with them I would have had to read the clinical histories, which was beyond the scope of my work. To these fifteen cases the nine cases of circular psychosis already mentioned would have to be added, so that we have twenty-four circular cases.

For greater clearness I will summarize what has been said: Of 257 patients, 233 were diagnosed as mania. Of the 257 patients, 128 were admitted "once," as will be remembered, the balance several times. These 128 are omitted here. In the number which is given for the pure periodical attacks of mania, for the circular and for the cases where other diagnoses incidentally obscure the picture, it is a matter at most of 129 cases admitted several times. Of these 129 cases, only sixty-three are diagnosed as mania, in fifteen the diagnosis of mania and melancholia alternate, but not regularly, twenty-one are not diagnosed as mania and in the remaining thirty cases the diagnoses above mentioned are found besides mania.

If one will now have the total number of cases in which the diagnosis of mania always recurs, to the sixty-three cases called pure periodical mania, fifty-one cases only admitted "once," would have to be added, which fifty-one cases were only admitted once and diagnosed as mania. Hence the total number of cases in which the diagnosis of mania was made once or several times amounts to 104.

These numbers of patients are compared to the number

of *admissions* (diagnoses). My investigations embrace 506 admissions.

Those in the first decade, not including the cases only admitted "once," are 242, and 136 in the second, in all 378. If I add the cases admitted "once," there are 325 for the first decade, 181 for the second, in all 506. The attacks of these 128 patients admitted "once," I could not count, whereas the sum of the attacks of the patients admitted several times are 242, 136, 381. In them I had a certain sign for each attack (the admission to the hospital); while I had elicited from the clinical histories of these 128 cases the number of attacks, from the indefiniteness of the statements I would have been left too much to discretion. So these 128 cases were always counted as 128 admissions (and attacks), although the number of their attacks is probably much higher and could not be ascertained exactly.

To these 506 admissions from 1876 to 1896, forty-six, which occurred prior to 1876, must be added for the sake of completeness, because the patients of these forty-six admissions were re-admitted later (1876 to 1896).

Of these 552, respectively 506 admissions, only in 280 (without the "single" cases), 195 in the first, 85 in the second decade, was the diagnosis of mania made. If I add the "single" ones, the figures increase to 276 and 129, in all 405. Besides thirty-seven of the admissions with the diagnosis of mania were prior to 1876, which are all referred to the cases admitted many times. So the sum of all the cases in which the diagnosis of mania was made amounts to 442. Patients with pure periodical mania participate in this total number with the following admissions:

1876-1885: 154 admissions (+ 26 before 1876).
1886-1896: 42 admissions (+ 5 before 1876).

1876-1896: 196 admissions (+ 31 before 1876).

Consequently for the 63 patients with pure periodical mania there are 196 + 31 admissions. To one patient with periodical mania there are then 3.6 admissions.

To the 257 patients of my statistics there are 552 admissions. From 1876 to 1896 there were 506 admissions, 46 prior to 1876, so that to each patient of my statistics there were 2.2 admissions.

If I finally compute the proportion for the patients with *periodical mania chiefly*, no matter whether the diagnosis is pure or not, I get:

To 147 patients 1876-1885: 203 (+ 36) admissions.

To 84 patients 1886-1896: 109 (+ 3) admissions.

To 231 patients 1876-1896: 312 (+ 39) admissions.

Each patient with periodical mania was then admitted 1.5 times. In the above table the numbers embraced in parentheses give the number of admissions prior to 1876. But the numbers given are not pure, for from the 203 admissions in the first decade, 58 are to be subtracted, which really occurred after 1886, and from the 109, 16 admissions are to be subtracted and added to (203-58) those which occurred prior to 1886. The real totals of admissions in the first and second decade then are $203 (+ 36) - 58 + 16 = 161 (+36)$ and $109 (+5) - 16 + 58 = 151 (+5)$. These 16 admissions, which are included in the second decade, although they occurred prior to 1886, refer to 15 patients, who then would really have to be reckoned in the first decade. I assign them to the second, because they were admitted with the diagnosis of mania for the first time subsequently to 1886.

I do not consider it worthless to arrange all the attacks of mania in another way, namely, as to the number of times admitted to the hospital. Twelve is the highest number I have found.

125 patients, 45 men and 80 women, were admitted *once* with the diagnosis of mania. Thirty were admitted twice from 1876 to 1885; 26 from 1886 to 1896, in all 56 cases. From 1876 to 1885, 13 were admitted three times, from 1886 to 1896, 11, in all, 24 cases. Eight were admitted four times, 6 five times, 6 six times, 4 seven times, one eight times, one ten times and 2 cases twelve times. Then of 106 cases of periodical mania (admitted several times), 42 had been admitted more than twice, then 39, 62%, of 233 cases of mania, 106 were admitted more than once, then 45, 8%. That 125 instead of 128 appeared in the beginning of this abstract, as the number of those admitted "once," was due to the fact that it is here a matter of the sum of those

admitted "once" with the diagnosis of mania, and among the 128 were found two circular and one case of periodical insanity, 3 cases in all, which had to be excluded.

When it was proven, as above stated, that 74 of these 125 patients are periodical cases, there were only 51 cases for further investigation. Among these 51 cases, were to be sought the possible cases of acute simple mania, the proof of their presence being the purpose of my paper. In 24 of the 51, I could find no evidence of a prior illness, *i. e.*, the patient had always been well. As I received no answer to my written inquiries as to what had become of the patients since being discharged from the hospital, I was wholly in the dark as to the possible relapses. I will designate these 24 cases as "possibly recovered." Now the 17 remaining of the 51 are the fortunate cases of my investigation. I will designate them as "certainly recovered." The clinical histories show that these patients had always been well; and written inquiries indicate that they have had no mental disorder since this one attack.

I present the 24 possibly recovered and the 17 certainly recovered cases in two tables.

TABLE I.

Possibly recovered cases, in whom only one attack could be proven.

PATIENT.	Date of attack	Duration of attack	Date of birth	Age at time of attack	Not re-admitted after
Margaret T.	1876	131			21 years.
Joseph G.	1878	14	1860	18	19 "
Louise M.	1878	190			19 "
Sophia T.	1878	185	1856	22	19 "
Anna T.	1878	252	1847	32	19 "
Carl C.	1878	36	1860	18	19 "
Henriette L.	1881	16	1858	22	17 "
Jacob E.	1880	153	1820	60	17 "
Joseph C.	1880	5	1839	41	17 "
Rudolf C.	1883	176	1866	17	14 "
Katherine, B. T.	1884	55	1819	65	13 "
Barbara S.	1884	33	1849	35	5 " *
Selina T.	1884	252	1861	23	13 "
Gertrude O.	1884	208	1861	23	13 "
Susanna L.	1885	60			12 "
Marie C.	1886	79	1862	24	11 "
Barbara C.	1886	890	1832	54	11 "
Emilia L.	1886	37	1857	29	11 "
August N.	1887	74	1855	32	10 "
Rudolf C.	1888	158			9 "
Selina U.	1890	71	1847	43	7 "
Albert Q.	1891	13	1864	27	6 "
Marie T.	1892	858	1851	41	5 "
Eliza C.	1895	352	1866	29	2 "

*Died in 1889.

The table embraces 24 patients, 8 men and 16 women. Fifteen, 5 men and 10 women, belong to the first decade, nine, 3 men and 6 women, to the second.

The duration of the attack, as above shown, varies greatly from 5 to 90 days. The following table presents the cases according to the duration of the disease:

- Less than 30 days, 4 cases.
- Less than 60 days, 4 cases.
- 60-80 days, 4 cases.
- 100-200 days, 6 cases.
- Over 200 days, 6 cases.

The following table presents them grouped according to the age at the time of the disease:

- Under 20, 3 cases.
- Under 30, 8 cases.
- Under 40, 3 cases.
- Under 50, 2 cases.
- Under 60, 2 cases.
- Under 70, 2 cases.
- Unknown, 2 cases.

It is still to be remarked that the cases, Elise C. and Marie T., have remained well until April, 1897. I do not include them in the following table, because they have had no relapse in less than 5 years.

In reading the clinical histories of the above cases, as well as those in the following table, I gave special attention (1) to ascertaining the causes which could have produced the attack, (2) to the degree of excitement. Rarely, very rarely, did I find a factor in the clinical histories which could be regarded with any certainty as the cause of the attack. It seems wholly worthless to relate and count and classify vague presumptions of relatives; either untenable at the first glance (unfortunate love affairs and the like), or, if possible, when their causative role is so little proven. My memoranda as to the degree of excitement, whether the patient was hypomaniacal, maniacal or raving, were similarly vague, as I could not elicit the degree of excitement from the clinical histories, which were made by others, so that I prefer to say nothing as to these memoranda. Only it may be said, that, so far as I could judge, among the 51 possibly and certainly recovered

cases, hardly 3 or 4 cases of hypomania appear, so that mania and frenzy especially predominate.

TABLE II.

Patients certainly recovered, who were admitted only once, had always been well previously and have not become ill again since the attack.

PATIENT.	Date of attack.	Duration in days.	Date of birth.	Age at time of attack.	Years without relapse.	Present age.
Caroline C.	1876	133			21	
Anna C.	1877	95	1835	42	20	62
Susanna S.	1878	333	1858	20	19	39
Bertha C.	1880	138	1802	25	17	95
Jacob J.	1880	43	1842	38	17	55
Fredericka T.	1881	25			16	
Henry T.	1883	30	1838	45	14	44
Henry M.	1886	268	1861	25	11	36
Anna L.	1886	118	1853	33	11	44
Jacob G.	1888	237	1860	28	9	37
Ida S.	1888	128	1870	18	9	27
John C.	1888	212	1867	21	9	30
Maria L.	1888	51	1856	32	9	41
Bertha C.	1891	83	1866	25	6	31
Philip C.	1891	109	1865	26	6	32
Josephine T.	1892	48	1868	24	5	29
Alfred T.	1392	234	1842	38	5	27

Of the 17 persons mentioned in this table, 7 are men and 10 women. In the first decade are 2 men and 5 women, in the second, 5 men and 5 women, in all 7 and 10 persons.

The duration of the attack varied between 25 and 233 days.

- Less than 30 days in 1 case.
- Less than 60 days in 4 cases.
- Less than 100 days in 2 cases.
- Less than 200 days in 5 cases.
- Over 200 days in 5 cases.

By grouping the cases according to the *age at the time of the attack*, we have:

- Under 20, 1 patient.
- Under 30, 8 patients.
- Under 40, 4 patients.
- Under 50, 2 patients.
- Unknown, 2 patients.

Nine cases, 3 men and 6 women, have had *no relapse* in over ten years; 2 cases for over twenty years. The others are as follows: 1 case for 19, 16 and 14 years; 2 cases

for 17, 11, 6 and 5 years, and 4 cases have had no relapse for 9 years.

When arranged according to the *present age* of the patients still living, we have:

- 3 patients are between 20 and 29.
- 6 patients are between 30 and 39.
- 3 patients are between 40 and 49.
- 1 patient is between 50 and 59.
- 1 patient is between 60 and 69.
- 1 patient is 95.
- 2 patients' ages are unknown.

In regard to table one, I have little to say, I do not doubt that one or two of the cases would have to be classed with the 17 certainly recovered, if it were possible to ascertain the whole truth as to everything. But I have little doubt that this is not true of the majority of the cases, and that on more careful investigation, relapses would be found. Still I do not know how many of the patients of the first table are still alive, nor how many years have elapsed since this attack. So, if I be exact, I am as little justified in regarding these cases as chronic as I am to consider them recovered, and in including them.

As to table II, we have a more favorable ground. The patients are alive, have had no relapses up to April, 1897, and a prior disease can at any rate be excluded with considerable certainty. Still we will be cautious, as is proper, and only consider cases as certainly recovered, in which we can prove a period of more than 10 years without a relapse, and of these we have only 9 cases. Kraepelin might not consider such a period sufficient, for on page 616 of his text-book, he says: "Intervals of 10 years and more may elapse; yet the new attack generally occurs much sooner." We do not then have in these cases an absolute guarantee that no new attack will occur. The majority of the patients are relatively young, and so may become ill again. Twelve of the 15 patients, whose age I know, are under 50, 9 under 40, 3 under 30. But the results which I have gotten from the material at Zürich, seem more favorable in regard to the prognosis of mania and the occurrence of simple acute mania, than those reported by Krae-

pelin from his experience. "Among the 1,000 patients," he says on page 615 of his work, "whose destiny I have been able to follow closely, there is only *one*, who, having a brief maniacal excitement at the time of development, has not become ill later. In *all the other* cases, which could be followed long enough, the first maniacal attack was the forerunner of a periodical or circular insanity."

In 1,000 cases, Kraepelin has found only one. In 233 cases, I find 9 at least, who have recovered* and when one reflects that there are cases with a period of no relapse for 14, 16, 17, 19, 20 and 21 years, further than that these persons to-day are 44, 55, 95, 39 and 62 years old, in 3 cases then over 50, it is somewhat probable that in these 9 cases we really have only *single* attacks. Of course, what does 9 cases signify! The prognosis of mania, as shown by my figures, is certainly not favorable. Heretofore, in speaking of the good prognosis of mania, that of the single attack and that of the maniacal disorder has not been separated strictly enough. If I had gone merely by what I found in the books of the hospital, and had accepted the note, "recovered," "improved" or "unimproved," as made on the patient leaving the institution, I would have been able to arrive at something different. Then if the "non-recurrent" cases were compared with the recurrent, the first forms 56%, the latter 44% of this whole number. But such a procedure would be worthless.

I now give the results of the whole work briefly, the highest and lowest number of recoveries, which can be computed from my material.

By taking the whole 51 cases, 24 possibly and 17 certainly recovered, assuming that they have all recovered, the proportion of the recurrent to the non-recurrent cases is as 233: 51, then 21, 9%, have recovered. If I take the 17 certainly recovered, then 7, 3%, of the cases recovered. If I am still more rigorous and consider only the 7 cases of the first decade as certainly recovered, in whom I could

**i. e.*, 9 cases with no relapse for 11 to 21 years. If the percentage is wanted, as near as I can give it, for the 7 cases in the first decade with no relapses, is 14 to 21 years. These 7 cases (recovered in this sense) are then referred to the total number of the first decade, which is 144; then 4, 7%, recovered.

prove that no relapse had occurred from 14 to 21 years, then only 4, 7%, of the cases have certainly recovered. In all these calculations it is to be considered that the number of periodical cases, which appear in my statistics, is more likley too low than too high. I can scarcely have erred in ascribing too many admissions to one case called periodical, but possibly it escaped me from inaccuracy in the report of the attack. It is still more imporant that many cases, as I have shown above, have not been included, which died or became chronic in the first attack, by whose addition the percentage of recoveries, would then have been again lowered.

At any rate it is proven that simple acute mania is a rare disease. The authority to do away with it entirely seems to me doubtful from the results I have gotten from my material.

It only remains for me to express my most sincere thanks to the Direction of Burghölzli for the kindness in permitting me to use the material of the institution, as especially to Dr. Delbrück for his excellent assistance in the composition of this paper.

GASTRIC PNEUMATOSIS,* (Trommelsucht).

Nervous Vomiting and Another Gastric Neurosis. A Review Epitome of Ewald.

WITHOUT doubt the author on diseases of the stomach who has best of all recognized the neural aspect of diseases of this organ is C. A. Ewald, of Berlin, nearly one-fourth of the concluding portion of his classical work being devoted to the Neuroses and physiological relations of this important organ of the animal body. Ewald's classification embraces:

THE NEUROSES OF THE STOMACH.

I. Conditions of Irritation.

a SENSORY	b SECRETORY	c MOTOR
Hyperaesthesia	Hyperacidity	Eruption
Nausea	Hypersecretion	Pyrosis
Hyperorexia		Vomiting
Anorexia or Hyperaesthesia		Colic
Paroxysia		Torminia ventriculi
Gastralgia		

II. Conditions of Depression.

Anaesthesia	Anacidity	Atony
Polyphagia		Insufficiency of the pyloris and cardia

III. Mixed Form.

Gastro-intestinal Neurasthenia (*Dyspepsia nervosa*)

IV. Reflexes from other organs upon the Gastric Nerves.

Reflexes from the brain, spinal cord, kidneys, liver, sexual organs, and intestines manifest themselves in the forms mentioned in I and II.

Pneumatosis, tympanites (*Trommelsucht*). Here the stomach is filled with gas and may become so distended

*Supplemental to the course of Nervous Diseases to the students of Barnes Medical College, St. Louis, by the editor, Professor of Neurology, etc., in said College.

that it causes not only the unpleasant sensation of marked tension, but even more severe nervous symptoms, by pushing the diaphragm upward and pressing on the heart. The patients are seized with typical attacks of asthma—the asthma *dyspepticum* of Hensch—in which at first there is only the annoying feeling of being compelled to take deep inspirations after short periods of normal breathing; at the beginning of this suffices, but later it develops into an incessant dyspnœa. Now there is also palpitation of the heart, pulsation of the peripheral arteries, fullness of the head, and even to the feeling of impending death, or complete unconsciousness—in short, such is the condition that I have been repeatedly told by many sufferers that they were almost driven to suicide. Relief can only be afforded by bringing up some of the gas, and then the attack rapidly subsides. This condition is probably caused by the gas that has been swallowed, together with a spasm of the sphincters of the stomach. The chemical processes were normal in one case which I examined, yet the same state may be produced in dyspeptics by the gas generated in fermentation.

The attacks may be relieved instantly by introducing and allowing the gas to escape. But it seems very difficult itself where it is nervous in character.

NERVOUS VOMITING.

This includes those forms of vomiting which are caused neither by anatomical lesions of the stomach nor by quantitative or qualitative changes in the food. It is pre-eminently reflex, and may be caused either directly by the vomiting center or indirectly from other points in the central nervous system; or from other organs. As far as we know, the causes of this condition may include palpable changes in the brain and spinal cord, kidneys, uterus, liver, and certain organs of sense. These forms of nervous vomiting may be classed among the reflex neuroses.

I have had the opportunity of observing two such cases of nervous vomiting in close succession; during their course they seemed to be very much alike, yet the nature of the primary affection caused them to terminate very differently.

The first case was a married lady, thirty-six years old, who had been suffering for three weeks with uncontrollable vomiting and a continuous flow of saliva, together with strong foetor from the mouth. This condition had come on after an attack of catarrhal jaundice, traces of which were just recognizable in a slight discoloration of the sclerotics at the time I first saw the patient. She had emaciated very little considering that she had taken scarcely any nourishment during this period, for she vomited everything immediately after eating. On examination, nothing could be found anywhere, not even in the liver. The passages were loose and bright yellow. Only temporary relief was obtained by the hypodermic use of morphine with atropine, washing out the stomach with chloroform water, and chloroform internally. Finally, the attacks were controlled by withholding all food and drink by the mouth, and using nutritive enemata for several days. But the salivation kept up some weeks longer, when it ceased entirely. The condition here was probably a reflex irritation from a gall-stone; hysteria was excluded because the patient was otherwise healthy and the mother of several grown-up children. I must not conceal the fact that for a long time the patient caused me a good deal of anxiety on account of the absence of definite points on which to base a diagnosis.

The second case was a lady in the fifties, living outside of Berlin; unfortunately, I had the opportunity of seeing her only once. In the early part of 1888 she experienced profound emotional disturbances; since the following summer she had suffered from mild gastric troubles which lasted, with variable intensity, till November. After that every meal was regularly followed by vomiting, which had continued with few intermissions till the beginning of January, when I saw the patient. The woman, who had formerly been strong, was now very much run down; she had frequent attacks of unconsciousness, and complained of great weakness, especially in the legs. Sleep was good. The urine had been repeatedly examined, but albumen and sugar were not found.

I found a bedridden patient who was still quite well

nourished in spite of the emaciation she complained of; she could move quite readily in the bed; she spoke with deliberation; in short, she seemed less affected than was to be expected from her history. On examination I could find nothing but a struma, and tachycardia up to one hundred and twenty beats per minute. There was no tumor nor any tenderness in the abdomen. Patellar reflexes normal; pupils reacted well; no limitation of the field of vision, and no complaints about sight. Sensation everywhere normal. Heart and lungs negative.

In my presence the patient ate two pieces of toast and drank a glass of water without vomiting. The tube was easily introduced and the stomach-contents expressed twenty-five minutes after. No hydrochloric acid found; the fragments of toast were scarcely at all digested. This result left the diagnosis in doubt between a severe neurosis and an occult carcinoma; yet the absence of true cancerous cachexia favored the former. The rapidity of the pulse was attributed to the struma; tabes accompanied by gastric crises was excluded on account of the absence of its specific symptoms.

The condition seemed to improve at first by using nutritive enemata and restricting feeding by the mouth as much as possible; small doses of digitalis and atropine were also given. But she soon relapsed into the old condition; she gradually grew weaker, till one day she was seized with epileptic convulsions and died several days later. An autopsy was not allowed, yet the whole clinical picture led me to diagnosticate an affection of the medulla oblongata, probably a tumor, involving the roots of the vagus, thus causing the persistent vomiting and the rapid pulse. At all events, this presupposes such a situation of the suspected tumor that the nucleus of the fibers of the vagus distributed to the heart was paralyzed or destroyed, while those fibers going to the stomach were kept in a condition of chronic irritation. The soundness of this supposition remains in doubt, although it is by no means without a parallel (Rosenthal).

Both of these cases are typical examples of severe

vomiting caused by nervous irritation, and at the same time they show how difficult (sometimes even impossible) it is to make a diagnosis at a given time during life.

For a certain group of cases we are unable to find this proof, although we may suspect the reflex origin. Pre-eminent among these stands the vomiting of neurasthenic and hysterical patients; it is uncommon among the former, but occurs frequently in the latter. It is characteristic of this form of vomiting that it usually occurs without any true nausea, and that the retching is reduced to a minimum. Hysterical vomiting may occur after every meal; sometimes it is less frequent. Either all food may be rejected or only certain kinds or even individual dishes. I made use of this fact in making my first investigations on the course of normal digestion in human beings; my subject was a hysterical girl who could retain all kinds of solid food, but was compelled to vomit whenever she swallowed any fluid. Another young girl, who has now been over five years at the *Siechenanstalt*, regularly vomits nearly all that she has eaten almost immediately after every meal. The general nutrition suffers surprisingly little from this persistent vomiting; thus the second patient's weight has been almost the same during the past four years; she has come down from 40.5 to 39.5 kilogrammes (89 to 87 pounds). In other cases the vomiting does seem to affect the weight. Thus Tuckwell* reports that three children were very greatly emaciated after prolonged vomiting which lasted for months; it was controlled by sitting the little patients up as soon as any tendency to vomiting occurred (and also, to be sure, carefully regulating the diet). Barras speaks of a woman who suffered from nervous vomiting, but who ceased to vomit while she was in the bath; she was cured after her meals were given to her in this way.

This affection may pursue an acute or chronic course; it may begin spontaneously or may follow some demonstrable cause. One young girl was attacked immediately after the death of her father; another as the result of break-

*Tuckwell. On Vomiting of Habit. *British Medical Journal*, March 22, 1873.

ing off an engagement of marriage. As in other neuroses, the female sex is especially liable.

I must confess that my experience of the infrequent occurrence of vomiting in neurasthenics does not agree with that of Rosenthal, who claims to have seen it not infrequently in this class of patients. I shall simply content myself with giving the headings of two of his histories:

Observation No. 31.—Neurasthenia, hyperæsthesia toward acids with consecutive gastric colic and vomiting. Cured by local remedies (small pieces of ice, with two or three drops of tincture of nux vomica) and general invigorating treatment.

Observation No. 32.—Neurasthenia following onanism, with frequent vomiting. After the latter had ceased it began again after each coitus, while a heavy meal did not cause any complaints. Neurasthenia and vomiting cured by prohibiting sexual intercourse at the beginning of the treatment, increasing doses of potassium bromide, with some pyrophosph. ferri citronatric. [Ph. Austr.] Neptune's girdle, galvanization of the sympathetic, and hydriatic procedures.

This difference in observation might appear striking; yet it may be readily explained by the fact that two observers in places at some distance from each other [Berlin and Vienna] deal with different kinds of patients. Concerning the multiplicity and intensity of all neuroses it is peculiar that they most frequently attack the easily excitable Southerners, and especially the nationalities living near the military border. Hypersecretion seems also to occur more frequently there than in Germany.

Finally, I must speak of a form of nervous vomiting which was described by Leyden.* It may occur as a primary neurosis, or as a secondary spinal affection, or as a reflex form. A peculiarity of this variety is the periodicity of the attacks [whence the name periodical vomiting], which may last from a few hours to a number (ten) of days. They begin with sudden nausea and colicky contractions of the intestines, but the abdominal wall is relaxed. At first the vomit consists of food *debris* and slimy masses, later of bile and streaks of blood; the attacks accompanied by migraine and tearing sensations in the limbs; they are

*Leyden. Ueber periodisches Erbrechen (gastrische Krisen) nebst Bemerkungen über nervose Magenaffectionen. Zeitschrift für klin. Medicin, 1882, Bd. IV, S. 605.

followed by obstinate constipation, which is due to a spasm of the intestine. The trouble may last for years, but its origin can only be sought in the directions indicated above. In two of my cases the autopsies gave negative results.

A CEREBRO-GASTRIC NEUROSIS WITHOUT HCL.

Mr. K., an actor, twenty-eight years old; slender figure. Previous history good; no organic diseases can be discovered. He was always in good health and lived quietly and regularly. In the winter of 1884-'85 he had to play a very exciting part several hundred times in succession at one of the local [Berlin] theatres. He felt exhausted and languid till in the following summer his condition became as follows, to use his own words:

"It seemed to me as if my entire abdomen was constricted with a cord, so that suddenly I was attacked with a feeling of anxiety; there was also oppression which extended high up into the chest and caused a tormenting dyspnoea. I could not take a long, deep breath, on account of the feeling of undue fullness in the abdomen. This condition persisted even when I had eaten nothing—e. g., on awakening early in the morning. I can not complain of any real pains, yet I have never felt really well ever since. The pressure in the abdomen and the oppression following it continually reminded me that my health was shattered. Although I frequently had a good appetite and relished food, yet not alone after eating, but even during the meal, severe disturbances set in, combined with endless belching and eructation, and great fatigue; in the beginning there was also vomiting, but after a few times this did not return. At times I was suddenly seized with a ravenous appetite, after the satiation of which the above attacks did not fail to appear.

"The family physician's remedies were all of no avail, and this condition persisted till the winter of 1886. Then the discovery that I had a tape-worm gave me hope that with its removal I would be cured. But, alas! even after that, the old state persisted, and, if anything, became worse. My arduous duties in the winter of 1886-'87 did not cause the trouble to be less marked. Since then every part of my body feels very tired and languid, and in spite of careful rest and forbearance this has persisted up to the present time. The pressure from the distended abdomen, oppression (frequently also stitches in the side), and dyspnoea still persist. In spite of this I still have an appetite,

sometimes a very large one; I usually relish food, but after meals, as a rule, though not always, the unpleasant symptoms make their appearance, and are more marked at some times than at others."

I have now [1889] treated this gentleman about three months, and during this time I have tested his gastric juice for hydrochloric acid nineteen times, at the most varied intervals after the test-breakfast, and also after a more abundant dinner. A small amount of free acid could be detected only three times. Propeptone was always present in relatively large quantities, but the peptone reaction was only faint, and the digestive power of the filtered gastric contents was negative, except in two tests, unless hydrochloric acid and pepsin were added. The rennet-action could be demonstrated in half of the tests, and that, too, in the absence of free hydrochloric acid, but at the same time lactic acid was present; at other times the tests for lactic acid and peptone were positive, although free muriatic acid, pepsin, and rennet were all absent. Large quantities of mucus were never present in the wash-water except the first time, when the patient had evidently swallowed large quantities, which were due to the irritation of the tube. On the other hand, on two occasions I found small shreds which differed from those usually present in the wash-water, by sinking rapidly in the funnel. They consisted of the adherent epithelial cells of the gastric mucous membrane already described. Although I consider this pathological, yet such abrasions continually occur in the mucosa of the stomach as well as in other mucous membranes, though they are usually not found, since the acid gastric juice digests them. Strychnine was first given in small doses; then later on his stomach was washed out and douched every second day with good results. In this case there was surely no mucous catarrh; an atrophy of the mucosa was also absent, since this occurs only as the consequence of a long-standing catarrh, or at a much more advanced age. None of the symptoms indicate cancer; what is, therefore, left but to assume that we are dealing with a neurosis?

Addendum.—The subsequent course of the case proved the correctness of my diagnosis. The patient went to a well-known establishment for nervous diseases, and then spent a long time in Switzerland. On his return the gastric symptoms had completely disappeared, and in his own eccentric way he could not say too much in favor of his cure.

But he now frequently had attacks of melancholia. The following summer he went to the country near a large lake. One evening he left the house and never returned. His body was found in the rushes at the border of the lake; he had evidently committed suicide by drowning.

The case was thus a neurosis which had at first attacked the vegetative functions, and finally had involved the mind.

A number of cases which were examined in 1887 by Dr. Wolff, of Gothenburg, and myself, at the *Frauensiechanstalt* of Berlin, to determine the condition of the gastric juice, may also be grouped in this category. To our great astonishment we found a permanent absence of free hydrochloric acid in a number of persons without the slightest stomach complaints. At my request, Dr. Sandberg, of Marstrand, examined these same cases again one year later, but in the majority of them he found no change; in a few of them, however, hydrochloric acid was detected. A neurosis is out of the question, since there are no indications of such a condition; but what remarkable and latent disorders can so profoundly affect the functions of the stomach? We can not assume the existence of severe degenerative processes in the mucous membrane, since free hydrochloric acid could be occasionally detected in some of them; furthermore, although I have been watching these cases for a number of years, I have seen no gastric symptoms which would necessarily be present in such a serious condition. After making similar observations Dr. Grundzach has also come to the conclusion that "the mechanism of the stomach performs its functions properly, or is very slightly disturbed, in spite of the complete cessation of this secretion." Moreover, in the course of the experiments on the effects

of the Carlsbad water mentioned on page 358, I had the opportunity of examining for two months a young, robust female nurse, twenty-eight years old, with good digestion; I always obtained an unusually low degree of acidity, so that I should surely have referred to an anomaly of secretion any complaints which she might have made regarding her stomach.

THE TREPIDATIONS AND PHOBIAS OF CEREBRAL NEURATONIA.

Timor Contaminationis (Fear of Contami- nation).

By C. H. HUGHES, M. D.

TO me this term has a more distinctive significance than Neurasthenia or Cerebrasthenia. Hence my preference therefor. Its primary cause is defective nutrition—Neuratrophia—of the cortex area of the brain, especially involving the psychic neurons. There may be and sometimes is, associated with it, similar involvement of the psycho-motor areas, but not necessarily.

The nutritional failure of the psychic area of the brain may be anaemic, toxhaemic, even hyperaemic, or it may be due to inherent or hereditary neuron defect, leading to those graver forms of phobic manifestation which terminate in the delusions of insanity. And insanity is always to be feared as a possible finale when these phobias appear, especially if there have been no profound causes of systemic breakdown preceding them and no superadded great psychic shock to have excited them. These phobias are morbid fears, with delusional taint and they are often phobias—in transit—to delusion.

The most prominent are the fears of contamination. They often pass into real *folie du toucher* and are sometimes associated with and merged into genuine *folie du dout*, the issue of insanity of touch or doubt depending much on

the psychiatric skill or want of proper psychiatric skill on the part of the managing physician, the extent of neuropathic heredity, and the influence of environment in each case.

The predetermining factors, aside from inherent predisposition, in these cases are usually causes of brain breakdown and a marked and timely psychical impression, not always a shock.

Some years ago I reported in the ALIENIST AND NEUROLOGIST, the case of a lad of good parentage and studious habits who had a morbid fear of contamination beginning with "verdiphobia," or a fear of anything green in color, and the beginning of this phobia, which after one recovery, recurred and ended in *folie contaminationis* and final death in an asylum for the insane, was the potato-bug and Paris green powdered paint.

He saw the farmers putting Paris green on the potato vines to kill the destroying potato-bug. After that, though very fond of potatoes, he would not eat a potato or sit at a table if potatoes were on it, or go where potatoes were. From this fear he passed to general verdiphobia, fearing green wall paper, green table cloths and everything that was green, even the current greenback paper money in circulation. No pecuniary consideration was sufficient to induce him to receive in his hands this money which he imagined was contaminated with poison.

PHOBIA CHIROGRAPHICA (FEAR OF WRITING LETTERS).

In December of 1897, there came under my medical care and remained under treatment until cured at the end of May, 1898, an overworked financial business man of Chicago, by nativity a Jew. His fear of writing letters was so great that he adopted the device of covering his right hand with a glove, finally with a dog-skin glove and a woolen mit which he wore in the hottest weather of the summer time.

In the beginning of his malady he would go to his office and yield to the impulse to write and if the letter got posted he would want it recalled from the postoffice or send another after it and then want that brought back and

destroyed. More often he would partly write and then destroy letters.

He was cured by attention to improvement of all his psychical functions with daily static electrizations, neurotic reconstructives and absolute abstention from his place of business and business men.

During part of the time of his treatment he made short pleasure visits away from the city, sometimes with and sometimes without his wife. The phobia went away when the nerve tone came back to him. There were none of the customary ablutions in this case.

PHOBIA INFECTIONES: PHOBIA CONTAGIOSA.

A young lady teacher of music who has studied hard and broken in her nerve tone, sleeping badly and not eating well, though still retaining her flesh, becomes fearful that she will contract disease from the people whom she meets on the street or in the street-cars, or at people's houses or public places of amusement, consequently she does not like to go home, even to dine with her pupils' families and persues her calling with trepidation and fear of contamination and has restricted the number of her pupils until she now has but two. She washes her hands as many as twenty-five times a day and is very unhappy from fear and dread.

She has no fear of me however and no fear of my office, being admitted to my consulting room without having previously to come in contact with the other patients. She has faith in my assurances, suggestion and treatment, believes the ozone generated by the static machine and the electricity itself are germ-killers and is now much more tranquil in regard to the subject of her fears and confident of safety. She appears to be getting well after five months of treatment with nerve tonics, the bromides with digestives, and confident assurances of safety.

PHOBIA CONTAMINATIONIS(MYSOPHOBIA, OF HAMMOND).

Through the courtesy of Dr. Chas. B. Fry, Chief Surgeon of the Peoria, Decatur and Evansville Railroad, the following case came under my observation:

Mrs. ——, about 26 years of age, mother of one child,

has always been of a nervous disposition. She was considered to be an invalid and was treated for some years for piles and retention of urine and was catheterized daily for weeks at a time. Dr. Fry attended her in her confinement and subsequently discovered that she had a fissure of the anus, which he believed to have been the sole cause of all her former trouble, as she has not had any physical ailment since he dilated her anal sphincter.

About a year ago a man who had some horrible sore upon his face came to her door to sell her something and the sight of his face made a profound impression upon her. She soon began to imagine that she had contracted cancer from him. She got hold of some article, in a newspaper or magazine, upon bacteria and after that imagined that everything about her was infected with some sort of disease breeding germs. She would scrub her hands twenty times a day, always after touching anything and finally was afraid to touch her baby from fear of infecting it. Those were the conditions when he was first called to see her. For several days after the doctor's first visit she acted quite rationally at her meals and laughed at her own folly; but she has begun again to act as before, and the doctor advised her husband to take her to me for advice and treatment.

Some flowers brought home from the cemetery by her mother next door to her, and the sexton living near excite fear of infection in her. Her husband steps on some blood in the street, and she is immediately disturbed with morbid fear of contamination from this incident, though he had on India rubber shoes at the time and threw them away before entering his house.

SELECTIONS.

NEUROTHERAPY.

THE USE OF PYRAMIDON IN DISEASES OF THE NERVOUS SYSTEM.—Horatio C. Wood and Arthur A. Stevens give in the *University Medical Magazine* the following example: Landenheimer (*Therapeutische Monatschefte*, 1898, Heft 4, S. 177) reports upon the use of this antipyrin derivative in more than 100 instances during the past year. In headache of undetermined origin, especially when occurring during convalescence from psychoses, five to eight grains gave relief after the lapse of one hour to two hours. It was equally successful in the headaches of alcoholics. In hysteria the results were uncertain, but for nervous men, those overworked and sleepless, the remedy gave satisfaction. The pain of alcoholic neuritis was not benefited, although the sensitiveness of the nerve-trunks was lessened. Of lumbago, two instances were benefited, a third unaffected by even large doses. Only two patients suffering from acute articular rheumatism came under observation. The pain speedily lessened, the swelling gradually disappeared. Chronic rheumatism was not benefited. The lancinating pains of tabes were temporarily benefited. The maximum dose given above can be safely administered thrice daily. Untoward symptoms have not been noticed.

PILULES CONTRE LE TREMBLEMENT DE LA PARALYSIE AGITANTE.—M. S. W. Gross.—Sulfate de strychnine, acide arsenieux, aa 0 gr. 06 centigr.; extrait de belladone, 0 gr. 30 centigr.; sulfate de quinine, masse pilulaire de Vallet, aa 2 gr. 40 centigr.; extrait de pissenlit, 1 gr. 20 centigr. F. S. A. quatre-vingt-dix pilules.—A prendre; trois pilules par jour. Potion stimulante pour remplacement l'alcool apres un excess.—Morphiæ sul., $\frac{1}{2}$ grain; etr. lupulinæ fl.,

tr. capsici, syr. limonis, aa 1 ounce; aquæ, aa 3 ounces. A prendre par cuilleree a dessert dans un peu d'eau, plus ou moins souvent finit par attenuer la depression qui suit un exces alcoolique.—*La Clinique*, Aout, 1898.

Our much esteemed contemporary takes from another esteemed contemporary, *La Clinique*, all in French, the above prescriptions for the trembling of paralysis agitans and for the depression following alcoholic excess. This is an innovation in the making of excerpts, but as the French is so near like that of our own language in these extracts, a linguistic tyro may translate them. They are therefore not *mal approprié* in an American journal.

ARTIFICIAL SERUM IN THE TREATMENT OF EPILEPSY.—At the meeting of the Academie de Médecine de Paris, Sept. 6th, 1898, Motet directed attention to the medical treatment of epilepsy, particularly the results of the researches of de Fleury. The latter states that injections of artificial serum enhance considerably the efficacy of the bromides, two or three injections of artificial serum causing a dose of two or three grains of the bromides to be equally as efficacious as very large doses ordinarily administered. Not only do the seizures become less frequent, but the mental condition of the patients becomes much improved. The serum is supposed to exert its beneficent action by lowering blood-pressure and acting as a tonic to the heart.
—*Philadelphia Medical Journal*.

FUNCTIONS OF THE THALAMI OPTICI.—M. Sellier and M. Yerger (*Archive de Physiologie*, October) have recently made some new researches with new methods to ascertain with greater exactness the effects of injury to this basal ganglion. They selected the dog and adopted the plan of bipolar electrolysis. Fine needles were made to penetrate the thalami and a current of ten milliamperes was passed. In none of these animals were any symptoms of meningitis observed. The necropsy in each case showed small destruction of tissue about the size of a grain of maize. The animals recovered from the operation and were tested for some weeks. Eight to ten days after the operation,

motility and sensitiveness to heat were always intact. The sense of the position of the limbs and the tactile sensibility were always affected. *At the end of a fortnight the disturbances of sensibility had entirely disappeared.* In two cases there was permanent visual trouble, but Seller and Verger could not determine whether there was complete unilateral blindness or a crossed hemianopsia. They conclude that the optic thalami have no influence on the voluntary movements of the animal and that there were no compulsory or forced movements. The sensory rôle of the thalami is undeniable, but thalamic anesthesia, like cortical anesthesia, does not include sensibility to pain and is transitory in duration.

CLINICAL PSYCHIATRY.

A SLEEP OF OVER FIFTY DAYS.—Dr. Markham Skeritt and Dr. James Stewart (*British Medical Journal*, October 1st) record the case of a youth, seventeen and three-quarter years of age, who slept for over fifty days under their observation. Attention was directed merely to the prevention of body waste, there being the greatest possible difficulty in getting him to take any food even in a liquid form. At this time his pupils were much contracted and but little affected by light even after he had been roused as much as possible from sleep. There was nothing in any way suggestive of catalepsy. There was a good color in cheeks and lips; the extremities were fairly warm; there was no anaesthesia; he never complained of headache; the pulse was slow and weak; the temperature normal; there was nothing remarkable about the urine, but the tongue was thickly coated with light brown fur; the knee-jerk was exaggerated, particularly on the left side, and there was at times some ankle clonus.

He lay in a calm, placid sleep uniformly, and when roused to take liquid nourishment (every four hours) he would speak, in reply to direct questions, very much as one does who talks in his sleep. It would sometimes take ten minutes or a quarter of an hour to rouse him sufficiently to

prevent his being choked in the attempt to get down the egg and milk, or beef tea, or other nourishment. Indeed, he would frequently drop off to sleep while in the act of putting the cup between his lips. The sleep was never a "profound" one, and when the calls of Nature demanded his attention there was an obvious desire to respond to them; but he would frequently drop off to sleep again before he could be assisted, and the inclination to evacuate his bowels or bladder would then disappear. Gradually this partial response ceased, and he passed in bed his motions, which cascara sagrada kept fairly free. Every effort was made to get him to empty his bladder naturally by propping him up against the wall and otherwise, but it was generally a failure. During this period priapism was very marked, but there were never any seminal emissions, and his hands had to be tied to the bedstead to prevent his practising masturbation—a habit to which he had been addicted. Another troublesome symptom was the frequent sickness, principally after the first meal of the morning, but this rarely occurred more than once in twenty-four hours. It may be mentioned that ever since an attack of rheumatic fever, by which his heart was affected, at the age of eight, there had always been a great difficulty in getting him to take sufficient breakfast for a growing lad.

He remained in this condition till the middle of March; then he began, while half awake and half asleep, to talk as if in a dream, sometimes saying things which were ridiculous, and occasionally asking how long he had been ill. He also showed evidence of an emotional tendency unusual to him. His weight, which previously had been gradually decreasing, began now slowly to return to the normal condition, and he was allowed to sit up for an hour or two daily from March 30th. The sense of taste, which was apparently quite absent previously, also gradually returned, but was not entirely restored till very recently.

The first thing he had to do when he commenced to stay partially awake for any length of time was to learn how to balance himself standing; and, next, to learn how to

walk without falling to one side. (Even at the present time—six months and a half since his seizure, and nearly four months since the end of his sleep—he is somewhat unsteady in his gait, particularly if he is the least fatigued). On April 10th he was taken out in a wheel chair, two months and six days after he had been put to bed. Ever since that date he has been spending as many hours as possible in the open air.

There is no impairment whatever of his mental faculties. His memory is quite clear with regard to events prior to his journey to Plymouth on January 17th, and those which have happened ~~since~~ ^{the beginning of} April last. As to what occurred in the intervening period, he has no recollection whatever beyond the fact of his brother and sister meeting him at the Bristol Station on January 27th. Everything between that date and the end of March is to him a complete blank.

INCREASE OF MELANCHOLIA.—The statistics of admissions into the insane hospitals not only in this country, but in Europe, show a diminution of percentage of acute mania and an increase in the percentage of melancholia. It will be remembered that a few years ago an epidemic, to which was given the name of Grippe, girdled the world. Traveling from east to west, crossing oceans and continents, its terrible effects were felt in almost every nation in the temperate and tropic zones. The cause of the epidemic has never been ascertained. By some of our ablest scientists it was attributed to electric disturbances in our atmosphere, produced by some action of the sun, shown by the dark spots on its surface appearing and disappearing with great rapidity. The after-effects of this terrible disease have been noticed by almost every physician. Dr. T. S. Clauson, superintendent of the Royal Edinburgh Asylum for the Insane, Scotland, in his report for 1896, accounts for the great increase of melancholia by the effects of the grippe upon the nervous system.

Dr. Talcott, in his annual report of the Middletown State Hospital for the Insane, coincides with the opinion of

Dr. Clauson and says: "As far as our observation in this country extends, the primary effects of the grippe have gradually disappeared, but they have left impressions on the nervous system like those of a cyclone in the forest or a sand storm in the desert. The great nerve trunks are torn up, so to speak, and prostrated by the sweep of disease; and that, too, beyond the power of help from every recuperative force. We find also in many instances the finer filaments of the nervous system have been pulled by the grippe into an abject condition of chronic and unrecoverable disease. The storm shocks that produce such pathological states in the most sensitive and delicate portions of the physical organization establish likewise a condition of desolation, ruin and despair within the hitherto serene habitation of the human mind. This cause is undoubtedly one of the great factors in the large increase of cases of melancholia which are sent to our hospitals for treatment."

Dr. Talcott's sermon, in the same report, in which he attributes one of the great causes of insanity and distracted, or partially unbalanced, intellects in childhood and after-life to the teachings of the pulpit, the Sunday school and erroneous home training is much more sound and practical than much of the teachings we were accustomed to hear from the pulpit. We say, were accustomed to hear, for the doctrines of hell, fire and damnation are fast being relegated to the past. The element of fear is being supplanted by that of love, which blends with the service of the sanctuary, the teachings of home, and is becoming more and more a part of the rule and the working of our daily lives. In theology as well as in medicine, the heterodoxy of to-day becomes the orthodoxy of to-morrow. Every year the great lines of thought, guided by scientific investigation and experience, converge more and more towards one broad highway, every milestone of which marks a more complete evolution of that great law of harmony and love which is the underlying principle of life, and even of creation itself.—*N. Y. Medical Times.*

THE PSYCHOLOGY OF RELIGION.—Dr. Edwin D. Starbuck, in a dissertation presented to Clark University for

the degree of Doctor of Philosophy, has made a noteworthy contribution to the study of religious growth. His method is not less remarkable than his results. The former is in accordance with that adopted by the prevalent school of scientific psychology: it proceeds by a statistical and tabulated study of the phenomena of religious experience as related by the individuals themselves, and attains results that are capable of objective demonstration. The thesis is consequently a contribution not only to mental physiology but also to mental pathology in this most comprehensive field of human experience. Dr. Starbuck, himself, does not apparently realize the full force of his work in the domain of psychiatry, but it is especially to this aspect of it that we have been attracted.

The author demonstrates quite clearly that certain psychologic laws control the development of the religious instincts. Beginning in childhood he traces the influence of early training; then the awakening in adolescence of a capacity for independent thought; then a storm and stress period; then a period of reaction or of inquiry and doubt, and, finally, a period either of settled belief or skepticism. This is all done by a series of ingeniously arranged tables, which permit of a rapid survey of the field.

Religious experience, as a mere psychologic phenomenon, has many phases of hope and fear, doubt and belief, but the one phase that appears to us most vital from Dr. Starbuck's tables, is the subjective sense of personal unworthiness. It is at this point that the study becomes of special importance to the student of psychiatry. This phase of mental depression (for such it is) is commonly and characteristically named by theologic writers the sense of sin. We think that no one can read the author's paper and not realize that this mental phase is the most conspicuous.

From the standpoint of the psychiatrist this sense of debasement of the ego is fraught with great danger to the mental health in some persons, and from the theologic standpoint it would be more wisely controlled if recognized as usually due to a departure from strict mental hygiene.

We should judge from Dr. Starbuck's paper that this sense of sin or degradation arises often—but not always—from errors in the sexual life, and this is in accord with the observations of psychiatrists. Failure to attain other ideals—especially in social progress and amatory relations—undoubtedly acts also to create in sensitive minds a morbid feeling of personal unworthiness. Physical defects and ill-health may also act thus. It should never be forgotten, however, that this form of psychalgia, or mental pain, from whatever cause, is the fundamental lesion in perhaps the largest group of cases of mental alienation, *i.e.*, melancholia. The morbid fear of death and of the future life does not seem to be as active a cause of this mental state as is commonly supposed.

From the strictly medical standpoint, what we should like to suggest to the scientific psychologists would be a statistic and analytic study in a large number of ordinarily healthy persons of their experience at various periods of their lives of this painful alteration in the ego, which we call the sense of personal unworthiness. We would dissociate it entirely for this study from the religious or theologic instincts, and confine the inquiry merely to this particular mental phase. We are convinced that few persons escape this experience entirely at some period of their lives. Psychalgia may exist in an infinite variety of forms and in many degrees. It is an integral factor in psychic development and experience, and has played a large part in human history. It is with many the object of constant mental discipline—with some the initial phenomenon of degeneration. We suggest that it should be studied with reference especially to the sexual and amatory instincts, to ambition and social progress, and finally to the physical health. To regard it as a phase necessarily or merely of religious growth is, we are convinced, too narrow a view and one calculated to ignore most important aberrations in the development of human faculty.—*Phil. Med. Jour.*

HARDWARE IN HER STOMACH.—Quarts of hairpins, needles, pins, nails and glass swallowed by a women.

A remakable subject was placed on the dissecting table,

says a daily paper, of a Toledo, Ohio, medical college, November 19th. It was that of a middle-aged woman. On dissection her stomach was found to contain a quart of hair-pins, pumpkin and melon seeds, small nails, pieces of glass and other indigestible substances. The intestines and stomach contained at least five hundred hairpins, all bent at right angles, the same number of brass pins and nearly as many needles. The pieces of glass were from one to three inches long. A ring, set with a fine stone, was also found among the mass. Altogether the mass of iron, brass and glass articles found made a mass as large as a Derby hat.

A hole three inches wide had been eaten through the walls of the stomach by the constant irritation and inflammation following the introduction of the sharp pointed articles of diet. It is said that the woman was insane. Of course she was. These stomachs which resemble a vagina in the hands of some of our gynecological friends, belong only to the insane. We once had a patient who ate a portion of the broken glass of a window pane and deposited the balance in her vagina. The contents of the stomachs of the insane sometimes resemble those of an ostrich. Patients who swallow pins and needles often, also insert them into the skin. Hundreds have been found in the bodies of the insane.

NEUROPATHOLOGY.

THE ACTION OF CERTAIN NARCOTIC SUBSTANCES ON THE BLOOD ALKALINITY AND THE RED-CORPUSCLES.

—Thomas (*Archiv fur experimentelle Pathologie und Pharmakologie*, Band xli, Heft 1, March, 1898) has investigated the effect of several toxic substances on the blood, and reports in the present paper his results with alcohol, chloroform, and ether. In a former study he had found that, after the administration of alcohol to a rabbit, the animal succumbed to one-sixth of the dose of cholera germs that was necessary to kill a sober rabbit. This fact was explained by assuming that alcohol diminished the bactericidal action of

the blood. In the present paper the studies are detailed, which were made to determine what factors of the blood were affected by alcohol. Experiments were also made with chloroform and ether. The conclusions arrived at are as follows: (1) In acute alcoholic intoxication, carbon dioxide as well as the alkalinity are greatly reduced, due to the fact that there is an increase of volatile fatty acids, which, for the moment, displace the carbon dioxide. The decrease of the red corpuscles cannot be of moment, as it is not constant. (2) The effects of chronic alcoholism make themselves fully manifest only after several months. The alkalinity remains about normal, the oxygen decreases, and later also the carbon dioxide. (3) After subcutaneous injections, of ether, just as after injections of morphine and chloral, the oxygen of the blood is reduced. The carbon dioxide and alkalinity remain practically the same. After the inhalation of ether, the carbon dioxide is increased, the oxygen diminished, and the alkalinity unaltered, while the number of corpuscles is increased, and may even be doubled. This is to be explained on the ground that the blood becomes inspissated and venous on account of the diminished oxygen supply. (4) Chloroform seems to diminish the alkalinity of the blood.—Drs. John Guiteras and David Reisman excerpts in *University Medical Magazine*.

PATHOLOGICAL CHANGES OF MUSCULAR TISSUE IN BASEDOW'S DISEASE.—M. Askanazy has called attention to the anatomical changes in the striped musculature in *morbus Basedowii* which he explained in four cases of the disease. These changes affect, so the author claims, the whole muscular apparatus, but in the individual cases all regions are not affected to the same degree. Microscopically, the pathological changes consist in an interstitial lipomatosis between the muscles which gradually take on a turbid, pale and relaxed appearance and are reduced in volume, so that at some places the muscular tissue is entirely replaced by fatty tissue. Under the microscope it is shown that, besides the new formation of fatty tissue in the perimysium internum and the perimysium externum, the

individual muscular fibres are in a condition of fatty metamorphosis, atrophy, atrophic proliferation of nuclei, at times with the formation of peculiar figures produced by the running together of conglomerates of nuclei, loss of striation, appearance of vacuoles and yellow pigment in the homogeneous contents, eventually disintegration. The condition is therefore an *atrophia muscularorum lipomatosa*. This microscopic finding presents a significant organic affection of the muscular apparatus in Basedow's disease which is of value in the post mortem diagnosis as well as for the purpose of explaining a number of pathological phenomena, e.g., emaciation, muscular weakness, affections of the eye, and Bryson's sign.—*Medical Review*.

THE LYMPHATIC GLAND AS A BACTERICIDES—According to the *Gazette hebdomadaire de médecine et de chirurgie* for October 28th, M. Eugene Martin allots to the lymphatic glands the function of elaborating an internal bactericidal secretion; and further considers that they have defensive duty of opposing the further progress of such bacteria as may have escaped destruction at the point of inoculation. The lymphatic gland constitutes a rallying point for the reenforcement of the defensive stand made by the leucocytes at the first place of attack, and it completes its functional activity by attenuating the virulence of the poisons. The lymphatic gland plays an extremely active part both against the microbes and their toxines, not in general and local infection.

HEREDITY; A CONTRAST.—Dr. D. G. Brinton, University of Pennsylvania, in current notes on anthropology *Science* Oct. 28th, thus quotes and comments: In the *Revue Scientifique* for April last, Dr. Cesare Lombroso, in an able discussion of the relative influence of heredity and environment, announced the conclusion that "the influence of environment is potent enough to annihilate all ethnic traits."

At the meeting of the German Anthropological Society in August of this year Professor Kollmann, of Basal, in an address on the same subject, stated the dictum of science to be that "the influence of heredity is far stronger than

that of environment. The ethnic traits are immortal and and persist, though the peoples who bear them may disappear from history." (*Globus*, Aug. 27. 1898.)

These are two of the most eminent authorities among Europeoan anthropologists. As the traditional circus man said: "You pays your money and you takes your choice."

CLINICAL NEUROLOGY.

ETIOLOGICAL ROLE OF SYPHILIS IN TABES.—I take the following from *La Presse Medicale*, of Paris, July 16th, 1898. I have several times since my return from Japan, put on record my disbelief in the syphilitic origin of tabes. It has always surprised me that such eminent men as Gowers, of London, should believe and persist in believing that syphilis has something to do with tabes. My disbelief in this theory is founded in fact. There is no tabes in Japan and for 1300 years the nation has been syphilitic, even to a measure of immunity. In 40,000 examinations in Tokio, Japan, I found not one case of tabes and 10,000 of syphilis.—ALBERT S. ASHMEAD, M.D., New York.

From *La Presse Medicale*, of Paris, July 16th, 1898. Tabetic atrophy of the optic nerves. M. Stadelmann, who has used mercurial treatment with several tabetics presenting an atrophy of the optic nerves, never saw that treatment produce accidents or be ill-tolerated. This medication has even given him complete success in a tabetic of fifty-two years.

Mr. Virchow finds that if there is an affection in which the etiological role of syphilis is nought, it is tabes, an essentially local affection. In order to support the syphilitic origin of tabes, one uses the frequent existence of syphilis in the antecedents of the tabetics: but, according to M. Virchow, to show the reality of this hypothesis, the frequency of tabes among the syphilitics ought to have been shown. M. Virchow thinks that in the etiology of tabes no more than in that of general paralysis, and aneurism of the aorta, syphilis has nothing to do whatever.

"As to the anti-syphilitic treatment of the tabetic atrophy of the optic nerves, M. Virchow does not think that it may be harmful in the tabetic ancient syphilitics.—*Societe de Medecine Berlinoise 6 Juillet, 1898.*

ONLY NERVOUSNESS.—A writer in the *St. Louis Medical Journal*, who signs C. R. B., calls attention to the wrong inflicted by the popular harsh estimate of "only nervously afflicted people."

Doubtless doctors know that a person who is nervous or inclined to hysteria, is in a serious condition; but they make a mistake when they imagine that every one understands the possibilities of such a state. The following true sketches are addressed to the doctors who do not wish to be cruel:

A woman working in a hotel had an attack that bordered upon pneumonia. The mistress and her husband, and all the household, felt sorry for the sick woman. She was moved into a room that could be warmed, and was well taken care of for a few days. The writer called about 11 o'clock on the third morning and found this sick woman cold and neglected—no fire in the stove, no breakfast. The first kind inquiry was answered by a smothered storm of tears. Inquiry as to the sudden change from kindness and care to coldness and neglect evoked the information that "the doctor says it is only nervousness."

Instead of pneumonia it was a case of nerves, and the patient was to be left cold and faint and unwashed till she gained strength by some miracle to go down three flights of stairs and dish up her own meal in a hot kitchen. The doctor, when questioned, said: "Yes; she is in a serious state; nervous system all run down; I told them so." This was not quite the same as the report of the doctor's opinion.

The next case was a school girl, away from home in a boarding school. At the beginning of her indisposition teachers and pupils were kind and attentive; but one day the writer on her way to the sick girl's room was waylaid by one of the teachers who said: "Miss So-and-So says

Mary must be left to herself. The doctor says she is not sick, only hysterical. You need not bother to go to her any more." Not being under madam's control, the writer went to the girl's room, and arrived just in time to keep the child from crying herself into a fever. The sudden change from care and kindness to neglect filled the child's mind with fears of all sorts.

This doctor when questioned was surprised to find that madam had placed such a construction on his remark. He had said she was nervous. "It was no real illness."

Perhaps some day—thanks to public libraries, where every child may have access to books concerning all manner of medical subjects—every one will have a correct understanding of the medical meaning of "only nervousness" and "hysterical." In common parlance they mean selfishness, foolish fear about one's health, a vain wish to create a sensation and "make a fuss."—C. R. B.

TABETIC ATROPHY OF OPTIC NERVE.—Silex found forty-four syphilitics out of fifty-four cases of tabetic atrophy of the optic nerve. Twelve had undergone a thorough specific treatment; eight had been treated for years; fourteen with inunction cures and the rest with pills. He concludes that even the most thorough treatment is not always able to prevent the development of this affection. He found all treatment of the atrophy ineffectual; electric, potassium iodid, strychnin, argentum, etc., administered in all kinds of ways. The only possible means to retard the development of the affection is with strengthening therapeutics to tone up the organism, especially the nervous system.—*Vienna klin. Rund.*, Oct. 30th. *Jour. A. M. A.*

A NEW SYMPTOM IN PERIPHERAL FACIAL PARALYSIS.—Bordier and Frankel (*Medical Week*, Oct. 1, 1897; *Cleveland Medical Gazette*, Sept., 1898) relate their observations of a phenomenon in facial palsy, the original discovery of which they believe themselves to have made. Their observations lead them to ascribe to this new symptom both a diagnostic and a prognostic value.

If a patient with a severe facial paralysis is asked to

shut his eyes, it will be found that while the eye on the normal side closes promptly and well, the one on the diseased side presents but a slight narrowing of the palpebral fissure. Now, if the closing effort be continued, the globe of the eye of the affected side will be seen to move first upward, then slightly outward, the eyelid in the meantime finishing its descent according to the degree of the paralysis of the orbicular muscle. Trial will demonstrate that the patient can not close the affected eye without this outward and upward movement of the globe; hence, if the patient is looking at some object, he is compelled to remove his gaze before he can close the eye.

The authors ascribe a triple value to the symptom. 1. It occurs only in peripheral disease. 2. The symptom is marked only when reaction of degeneration is complete; hence its presence stamps the paralysis as severe and serious, and in the cases observed, where the orbicularis is contracted without the deviation of the globe, the paralysis proved transient and curable. 3. It permits an accurate judgment of the progress of the recovery, since such result is invariably accompanied by a lessening deviation during orbicular contraction.—*N. Y. Med. Journal.*

TABETIC TALIPES VALGUS.—At a meeting of the Section in Orthopædic Surgery of the New York Academy of Medicine held on October 21st, reported in *New York Medical Journal* November 26th, the chairman, Dr. A. B. Judson, presented a photograph showing talipes valgus of the left foot in a man about thirty-five years of age affected with locomotor ataxia of several years' duration. It was an instance of Charcot's joint affection of the tarsus. The patient's right knee joint had been exsected for this condition, but stability had not been restored to the knee by the operation. Pathologically, there were pulpy and fluid degeneration of the bony and other tissues and disintegration of the structures of the joints. Equino-varus also, the speaker remarked, occurred in locomotor ataxia and in Friedreich's disease, but was the result, not of bony changes, but of abnormal muscular action. The primary disease was



so serious and disabling that the question of treating these secondary affections was not often a practical one. Mechanical treatment might, however, be considered with three objects in view: 1. To give firmness to the foot and ankle and direct the sole to the ground. 2. To give lateral support to a Charcot knee. 3. To stiffen the knees by the use of automatic joints, in order to prolong the period for which locomotion was possible with the aid of crutches.

SOME OBSERVATIONS ON BRAIN ANATOMY AND BRAIN TUMORS.—Abstract.—Dr. William C. Krauss, of Buffalo, read a paper at the 92nd annual meeting of the Medical Society of the State of New York, Albany, Jan. 25th, 1898, with the above title.

He called attention (1) to the difficulty in remembering the gross anatomy of the brain, and (2) to the almost universal presence of optic neuritis in cases of brain tumor.

He attempted to overcome the difficulty in regard to the anatomy of the brain by formulating the following rules, which are somewhat unique and original, and at the same time easily remembered:

Rule of Two. 1. The nerve centers are divided into two great divisions, (1) encephalon, (2) myelon. 2. The encephalon is divided into two subdivisions, (1) cerebrum, (2) cerebellum. 3. The cerebrum, cerebellum and myelon are divided into two hemispheres each, (1) right, (2) left. 4. The encephalon is indented by two great fissures, (1) longitudinal, (2) transverse. 5. Into these two great fissures there dip two folds of the dura, (1) falx cerebri, (2) tentorium cerebelli. 6. There are two varieties of brain matter, (1) white, (2) gray.

Rule of Three. 1. There are three layers of membranes surrounding the brain, (1) dura, (2) arachnoid, (3) pia. 2. Each hemisphere is indented by three major fissures, (1) sylvian, (2) rolandic or central, (3) parieto-occipital. (3) Three lobes, frontal, temporal and occipital, on their convex surface are divided into three convolutions each, superior, middle and inferior, or 1st, 2nd and 3rd. 4. There are three pairs of basal ganglia, (1) striata, (2) thalami,

(3) quadrigemina. 5. The hemispheres of the brain are connected by three commissures, (1) anterior, (2) medi, (3) post-commissure. 6. The cerebellum consists of three portions, (1) right, (2) left hemisphere, (3) vermes. 7. There are three pairs of cerebellar peduncles, (1) superior, (2) middle, (3) inferior. 8. The number of pairs of cranial nerves, in the classifications of Willis and Sommering, can be determined by adding three to the number of letters in each name: that of Willis making nine, and that of Sommering making 12, (or the name containing the more letters has the larger number of pairs of nerves, and vice versa) 9. The cortex of the cerebellum is divided into three layers of cells, (1) granular, (2) Purkinje's cells, (3) a molecular layer.

Rule of Five. 1. Each hemisphere is divided externally into five lobes of which four are visible, (1) frontal (2) parietal, (3) temporal, (4) occipital; and one invisible, (5) insula (Isle of Reil). Roughly speaking, the visible lobes correspond to the bones of the cranium: that is, the frontal lobe is underneath the frontal bone, the parietal lobe beneath the parietal bone, etc. 2. The brain contains five ventricles, of which four are visible—the right and left, or 1st and 2nd, the 3rd and the 4th; and one invisible, the 5th or pseudoventricle. 3. The cortex of the brain contains five distinct layers of ganglion cells.

Studying carefully 100 cases of brain tumor in which an ophthalmoscopic examination had been made for the presence or absence of choked disc (optic neuritis) Dr. Krauss announced the following conclusions:

1. Optic neuritis is present in about ninety per cent. of all cases of brain tumor.
2. It is more often present in cerebral than in cerebellar cases.
3. The location of the tumor exerts little influence over the appearance of the papillitis.
4. The size and nature of the tumor exerts but little influence over the production of the papillitis.
5. Tumors of slow growth are less inclined to be accepted with optic neuritis than those of rapid growth.

6. It is probable that unilateral choked disc is indicative of disease in the hemisphere corresponding to the eye involved.

7. It is doubtful whether increased intracranial pressure is solely and alone responsible for the production of an optic neuritis in cases of brain tumor.

REGENERATION OF NERVE FIBRES IN THE CENTRAL NERVOUS SYSTEM.—This was a paper by Dr. W. L. Worchester, of Danvers. In an old case of necrosis of the right corpora quadrigemina he found in the degenerated portion several bundles of contorted fibres, entirely dissimilar to any normal structure in this region, and resembling an amputation neuroma. They seemed to originate from the tegmentum above the red nucleus. He believed them to be an outgrowth of newly-formed fibres from neurons that had been interrupted by the lesion.—Proceedings American Medical Society.

THE URINE AND BLOOD IN DIABETES AND GRAVES' DISEASE.—Badger (G. S. C.) Some observations on the urine and blood in diabetes in *Nat. Med. Review* throw new light on these subjects. Observations were made on three diabetic and, as control contrast, on twelve non-diabetic patients, to determine if, in the diabetic cases, the pancreas was diseased or not. The salol test was employed, fifteen grains being given every four hours until one drachm had been taken. The urine was examined four hours thereafter until salicylic acid had disappeared. It was found that this test, as a means of gaining information concerning the condition of the pancreas, was of little value in cases of diabetes. In a series of seven cases the reaction described by Bremer with Congo red or methyl blue was obtained in all, but with Biebrich scarlet the results were negative. Contrary to the assertion of Lepine and Lyonnet, the blood in splenic myelogenous leukemia was found to react with Congo red or methyl blue, not like diabetic, but like normal blood. *But it was found that the blood in exophthalmic goitre was affected by these stains exactly as is diabetic blood.* R. T. Williamson (*Brit. Med. Journal*, September, 1896) describes

a method of diagnostinating diabetes by an examination of the blood. Take 40 cm. of water, 40 cm. of potassic hydrate of sp. gr. of 1.058 (a 6 per cent. solution), 20 cmm. of diabetic blood, and 1 ccm. of an aqueous solution of methylene blue, 1 to 6,000. Mix carefully and place in boiling water, without shaking. At the end of three or four minutes the blue solutions have been decolorized and become yellow in color. Shaking the tubes during boiling prevents the reaction, and if they are shaken after decoloration the original color reappears. This reaction was noted in diabetics and not in leukemia, Graves' disease, or in normal persons. When methyl blue was used (1 to 6,000) the color of the mixture, after the addition of the blood, was not blue, but clear reddish yellow, whether the blood was diabetic or non-diabetic. But on placing the tubes in boiling water the contents of that containing diabetic blood turned a dirty yellow color, while in the other tube the color remained clear reddish yellow. If methylene blue be used the reaction is much more striking. The color of the solution after the addition of the blood is a deep greenish blue, while after boiling for three or four minutes the solution containing diabetic blood turns a yellow color, the contents of the other tube remaining unchanged. One case of diabetes gave a reaction with methyl but not with methylene blue. Williamson gets the same results with the urine of diabetic patients, using 20 cmm. of urine instead of the same quantity of blood. It seems probable that the reaction in both blood and urine depends upon the presence of sugar. For, if the sugar is fermented out of a specimen of urine, decoloration will not occur, while watery solutions of grape sugar (1 per cent.) produce the same reactions as diabetic urine. The value of the reactions from a clinical standpoint seems slight. None of these tests are as simple as Fehling's; true diabetes cannot be differentiated from tempory glycasuria, and by Bremer's method diabetes cannot be distinguished from Graves' disease.

CRANIAL PERCUSSION.—Dr. James Tyson makes the following excerpts in *University Medical Magazine*. Paoli

and Mori (*Il Policlinico*, February 15th; *British Medical Journal*, May 21, 1898) have made an extended series of observations on the value of percussing the cranial cavity as an aid to diagnosis in cases of intracranial disease. They begin by giving a careful account of the results obtained by percussing the normal skull. They point out the necessity of shaving the head in cases where the hair is thick, and they prefer to percuss with the finger directly on the surface. They recommend the division of the cranial surface into three symmetrical parts,—frontal, parietal and occipital,—and in each of these regions there are constant points, so that the note of one side may be gradually compared with the corresponding note of the other. In the case of the frontal and occipital regions there are median points as well. By their investigations they find that a dull note is found in a very limited extent, the rule being a high degree of resonance, with well-marked differences according to the portion percussed. They also find that the results vary with age and sex and, to a certain extent, with the density of the skull-cap. They also find that the sense of resistance varies in different instances. Thus in boys, in the first decennium, there is a very notable resonance in the note, more particularly in the temporal and parietal regions, while in some portions of the frontal (more particularly over the sinuses) and in the occipital, the note is fairly dull. In boys subject to rickets the note is still more resonant, and sometimes a crack-pot element is perceived. In adults the note varies to a certain extent; in women there is more resonance, the note resembling rather that obtained in childhood, and a crack-pot sound is not uncommon. In the adult man the resonance is much less than that obtained in women and children, and the areas over which the dull note is heard are much more extensive. In advanced age the opposite obtains, for in old women the resonance is considerably diminished, while in old men of the same age it is much more marked than earlier in life. The authors therefore draw attention to the fact that want of symmetry in the cranial development must be looked for. The areas which generally give dull note are the parts over the frontal

sinuses and mastoid processes, especially in young children, which the writers regard as curious, in view of the facts that there are air-spaces in both these situations. After ascertaining these facts the authors proceeded to examine patients with different forms of intracranial disease. Their first case was a boy suffering from epilepsy, who had fractured his frontal bone by falling. Percussion showed marked dullness all over the portion corresponding to the fracture. The patient was subsequently trephined, and considerable thickening of the dura was then discovered, with large layers of hemorrhagic infiltration in the form of hematoma and exactly corresponding with the area of dullness. Several other cases of fracture were similarly examined, and the writers were enabled to note marked degrees in the amount of resonance. Another case is quoted in which, as the result of a fall, a patient lost the use of his right hand and arm and speech. On examination a wound was found over the right half of the occipital bone, and careful percussion showed a marked decrease in resonance on the left side of the head over the parietal. The patient improved considerably, and subsequently regained the use of the right hand and arm, and at the same time percussion showed a return of resonance over the left motor area. The authors consider that this method of examination is likely to prove of considerable service in certain cases of injury to the head.

ESSENTIAL PAROXYSMAL TACHYCARDIA.—Caceianiga (*Rivista veneta de scienze mediche*, p. 261; *Munchener medicinische Wochenschrift*, No. 29, 1898) states that essential paroxysmal tachycardia is not due to paralysis of the vagus or to irritation of the sympathetic, but that it results from fundamental disturbance of the nervous centres of the heart, a diminished resistance of the cardiac ganglia, associated with diminished or absent activity of the inhibitory centers.
—*Tyson in University Medical Magazine.*

PSYCHIATRY.

EROTIC HALLUCINATIONS AFTER MENOPAUSE.—The

American Medico-Surgical Bulletin mentions a case lately under the notice of Charpentier. A woman of fifty-five told the Doctor that, though she had passed the climacteric, she had had connection with a man, and now had unmistakable symptoms of pregnancy. She confessed also to her son. The Doctor, after examination, assured her nothing was the matter with her, and later discovered the connection was also a delusion. In a few months she returned expressing the same fear. Another woman of sixty-five had such strong erotic desires that she secluded herself completely for fear of yielding to her passion. While her husband was alive she said she was of a very cold temperament. Charpentier thinks that eroticism is rare during or after the menopause, but Vallan asserts that there is no period in woman's life in which erotic desires and hallucinations are more frequent.

INVENTOR'S-MANIA may one day become a distinct type of mental disease. A year ago Mr. Tesla wrote as follows:

"I have made extensive study and experiment, to the end of finding some means of clearing the human skin of these deadly microbes and I have succeeded in inventing a means by which it can be kept free from their ravages." Part of Mr. Tesla's plan was the use of "a battery I have myself invented. With this battery I have charged human bodies so successfully that microbes have been thrown off in a perfect shower, some of them being thrown as far away as four and five feet."

Since then "discoveries" have been announced by the same authority for doing more impossible things than were ever dreamed of by Kelvin or Edison. One after another the wonders slip into oblivion like the great healers, the miraculous specifics, and the marvellous nostrums. But there is one invariable constant—the public avidity for the same thing with a mere change of names—*Phil. Med. Jour.*

THE INFLUENCE OF AUTOINTOXICATION IN THE PRODUCTION OF EPILEPSY.—Weber (*Munchener medicinische Wochenschrift*, No. 26, 1898). The views regarding the occurrence of epilepsy may be arranged as follows: The symptom-complex of this affection results from some disease of the cerebral cortex, in the production of which three elements are operative: (1) Hereditary taint; (2)

personal predisposition, the result of injurious influences which may affect the nervous system at any time after birth; (3) a periodically recurring exciting cause, which, through irritation of the predisposed cortex, results in the occurrence of the epileptic seizures. Clinical observations, the results of investigations into metabolism, and pathologic anatomic findings, show that the poisonous products of disturbed metabolism have considerable bearing upon the second and third of these elements. Little is known as to the nature of these poisonous products; in some cases the offending agent is supposed to be carbamate of ammonium, resulting from urea. In the therapeutics, therefore, attention should be directed to dietetic regulations, which would influence metabolism and permit of the ready discharge from the body of these poisons. In addition, however, the administration of the bromides is of the utmost value.—*Tyson in University Medical Magazine.*

EDITORIAL.

[*All Unsigned Editorials are written by the Editor*].

Why was Experience Ignored in the Commissioning of Volunteer Army Surgeons in the Late War with Spain? is a question the veteran surgeons of the civil war and the medical profession would be pleased to have the investigating commission answer. There were as competent medical men available for the army medical staff as there were among veterans to serve as field officers, able bodied medical men, not superannuated, who would have enriched the army medical department with experienced suggestion and adorned it with competent life saving service, where death reigned from inexperienced incompetency instead.

The Chief Function of the Army Surgeon is preventive sanitation. Army sanitary knowledge is an evolution of experience in military and civil life in sanitation which does not culminate at the age of twenty-eight years, but ripens with age and vigorous medical life and observation in the army.

The Age Limit for admission to the army medical staff should be extended to secure a maturer medical experience in our military hospitals and in field duty.

Mature Medical Judgment is Needed for the Army as well as in civil life. The maturity of medical judgment is not complete at twenty-eight years, the maximum age limit for admission to the army and navy medical corps, nor at thirty-eight. That country which will secure for its army and navy medical staff from twenty to forty or even fifty years of a medical man's ripe experience is the most fortunate and the best years of a medical man's service in the army for the good of the service in ripe and fruitful experience should be the thirty or thirty-five years preceding his retirement. Medical men are still young in knowledge of the resources of their profession at fifty and sixty and even up to the time of their retirement from service.

The present maximum age limit is a mistake. A liberal proportion of surgeons and sanitarians should be eligible to commission in the regular service far beyond it. Young men for action, older men for wisdom in the medical staff. The younger men for the moving duties of the field, the older men for the permanent camp and general hospital service.

The Surgeon General, U. S. A., has the sympathy of this journal in the many trials of his department in the late Spanish-American war and our commendation, in the main, for the satisfactory manner, considering all the embarrassments of the rush campaign, in which he has responded to the unusual and exceptionally exacting demands on the medical department with Governmental medical provision for not over twenty-five thousand men and suddenly called upon to arrange for the sanitation, treatment and medical supply of a quarter of a million of men. He was handicapped by inadequate rank, a too narrowly restricted age maximum for medical enlistment, subordinate authority for securing transportation and a precipitate service, in a season and climate not contemplated, when laws and appropriations were made for caring for the regular army. He discharged the onerous duties of his position with credit to the medical department and with honor to the medical profession. The Surgeon General did not order the prophylactic use of quinine in Cuba as we would have done, from our army experience in the South, nor get as many ex-military surgeons experienced in army sanitation, especially with regard to malaria in southern camps and fields, as might have been secured with more time at Santiago, but the Surgeon General is entitled to individuality of opinion and is not censurable therefor, as some of his critics seem to think.

General Sternberg appears through all the trial put upon him, to have been energetic, patriotic, well informed, provident in his recommendations and as swift to execute in his department as all the harassing circumstances permitted him and we sustain him. If commissary and quartermaster had done as well at Santiago as the medical department it had been better for the sanitary welfare of the army.

The Wonders of Ophthalmic Neurology and Nasopharyngology.—In the discussion of Dr. Hughes' paper on the management of epilepsy before the St. Louis Medical Society, Dr. John R. Keiffer related how a patient suffering from petit mal and intestinal atony, with enormous

tympanites, had bowel symptoms relieved and the petit mal converted later into grand mal by an operation for strabismus. Next comes M. Thomas who, in *La Presse Medicale*, Oct. 29th, reports to the Congress of Gynæcology, Obstetrics, and Pædiatry the case of a child ten years of age with divergent strabismus, consequent on an attack of meningitis which he had undergone at the age of twenty-two months, and which left him in a semi-idiotic condition. After curetage of the nasopharynx for adenoids the strabismus entirely disappeared. Of course, the curettment cured the strabismus!

A few more of such remarkable results and the occupation of the eye neurologist will be gone. The nasopharyngologists will be spurred on to claim the field of neurotherapy and the brain will be useless as a source of disease. It is unfortunate that this last case fell into the hands of M. Thomas instead of those of M. Stephens, for in the latter's hands even the idiocy would have disappeared. It would be a good idea, however, to continue tracing up these remarkable results, as the New York Academy of Medicine did and run them down to the final truth. There would generally be found something for the neurologist to do even after these ophthalmologic cures; and even after a deflected septum may have been straightened or a spur of bone removed by the nasologist. It is wonderful, however, how neurotherapy is simplified when we see no further than the eye, the nose or pharynx. The vis medicatrix naturae is no where in comparison.

The American Microscopical Society, at its recent annual session, elected the following officers for the ensuing year: President, Dr. William C. Krauss, of Buffalo; First Vice-President, Professor A. M. Bleile, of Columbus, O.; Second Vice-President, Dr. G. C. Huber, of Ann Arbor, Mich.; Secretary, Professor Henry D. Ward, of Lincoln, Neb.; Treasurer, Magnus Pflaum, of Pittsburg; Executive Committee Professor S. H. Gage, of Ithaca; Dr. A. Clifford Mercer, of Syracuse, and Dr. V. A. Moore, of Ithaca.

Postponement of the Third Pan-American Medical Congress to December, 1900 is announced. The meeting is to be held at Caracas, Venezuela.

The Bedborough Trial.—A very interesting and important subject has lately come up in England through the Bedborough trial in which Havelock Ellis's great book "Sexual Inversion" was arraigned as an obscene offence

against public morals through the indictment of the book-seller, Mr. Bedborough.

The case excited much interest in medico-scientific and philanthropic circles in England. There exists better reason for arraignment of the newspapers for publishing the court proceedings in which sexual perverts figure, especially such cases as Oscar Wilde, than the seller of such a book as "Sexual Inversion."

It is time that the law should provide for a commissio de inversio sexualis inquirendo" or an "inquirendo degeneratio morbos" as well as a "commissio de lunatico inquirendo" in certain cases, for neuropsychic degeneracy displays itself as plainly in the perverted sexual phases of the morals as in the distorted features of the intellectual life alone, perverting both mind and emotions, as Havelock Ellis, Kraft-Ebing and others have so clearly shown. But as the prophets and reformers were stoned for telling unwelcome and unflattering truth and scientists have been likewise persecuted for example, Galileo and Jenner, so the revelations of truth in a book like that of Havelock Ellis, imperil those who have to do with them. Thus the history of human persecution repeats itself in the enlightened "fin de siecle" of the nineteenth century. But the blood of the martyrs of science is the seed of progress for humanity.

Insane Hospital Trained Nurses.—As "the care of the human mind," as Grotius wrote, "is the noblest branch of medicine," so the care of the insane is the noblest department of nursing and the thoroughly trained attendant upon the acute and chronic insane must possess all the knowledge, tact and skill of the ordinary hospital nurse, when his patient is critically ill and the special ability "to minister to the mind diseased" besides. Candor, caution, courage, patience, sympathy, tact and capacity which includes correct deportment, moral and physical, are the cardinal virtues of the good attendant. The good insane hospital nurse must approach, in his attributes, a paragon of perfection and not expect, in the majority of state institutions, over forty dollars a month. We are for highly trained hospital nurses and for gradation of service and higher pay for the best.

The Society of Medical Jurisprudence.—The 13th regular meeting will be held on Monday evening, April 11th, 1898, at 8 p.m., at 17 West 43d Street (Academy of Medicine). The paper of the evening will be "The Legal Disabilities of Natural Children Justified Biologically and Historically," by E. C. Spitzka, M.D.

The Medical Dial, a monthly record of medicine and surgery began its career in the journalistic world at Minneapolis, Minnesota, in December. It will be issued on the first of every month at Minneapolis, Minn. Its Editor is J. W. MacDonald, M.D., F.R.C.S.E.; Associate Editor, C. K. Bartlett, M. D.; Business Manager, E. E. Griswold. Its collaborators are A. W. Abbott, M.D., R. O. Beard, M. D., J. W. Bell, M.D., J. Frank Corbett, M.D., J. W. Dudley, A. M., M. D., J. H. Dunn, M. D., F. A. Dunsmoor, M. D., W. A. Hall, M.D., G. D. Head, B.S., M. D., Knut Hoegh, M.D., C. H. Hunter, A. M., M. D., W. A. Jones, M. D., J. D. Simpson, M.D., J. H. Stuart, A.M., M.D., H. B. Sweetser, M.D., David Owen Thomas, B.A., M.D., M.R.S.C.S.

The first number offers the following scientific and intellectual menu: Original articles, "Chronic Valvular Lesions".—A clinical lecture delivered at the Minneapolis City Hospital, by John W. Bell, M.D., illustrated; "Modern Ideas of Inflammation", by Knut Hoegh, M. D.; "What are the Proper Limitations in Alexander's Operation?" Editorials, "Salutatory", "The Sub-Conscious Mind—Subliminal Consciousness", "The Therapeutic Uses of the Suprarenal Gland", "The True Aims of a Medical Journal", "Etherion, the New Atmospheric Gas", besides reprints on the "Progress of Medicine". Its goes "forth among men, not mailed in scorn, but clothed in the armor of a pure intent" as we glean from the following editorial statement of its aims:

The True Aims of a Medical Journal.—It should have a high standard of excellence in all matters pertaining to medicine and surgery. It should not be only a gleaner in the fields of literature on the subjects discussed, but seek original theses of practical importance from the best authorities on diseases with which each is most familiar. It should criticise with knowledge and judgment, giving credit or blame justly with the reasons for the opinions expressed. In every respect it should have the six qualities of the ideal physician, viz: "Bold when sure; cautious in danger; kind to the sick; friendly with fellow-workers; constant in duty; not greedy of gain."

We trust its purity of purpose and nobility of aim, may remain with it, after it shall have gone through with the usual journalistic tussle for its honor with the ravishing medical advertiser.

We welcome the virgin *Dial* to our virtuous fold.

Sigmund Freund's Foolish Conclusion that "every case of neurasthenia has some abnormal occurrence or occurrences in the sexual life of the patient at the present

time or since puberty," got into our selection department as a curiosity of the absurd lengths to which medical men will go in their conclusions, either when seeking medical notoriety or when they take leave of their season. The young and the aged, male and female, become neurasthenic. Any cause developing neuratropia may produce neuratonia or neurasthenia. Any cause capable of breaking down the nervous system before the development of distinctive disease of organs may give rise to neurasthenia in the neuropathically predisposed. It is simply absurd to assume, as he enjoins, an abnormal sexual life—masturbation for instance—in every case. It is not much more than a generation ago since nearly all insanity was absurdly assumed, by certain writers to be caused in the same manner, in the very face of overwhelming adverse clinical facts, until better observation forced the truth upon all, that insanity, as a type of nervous breakdown, destroying or impairing the normal higher inhibitions, led to excessive masturbation, etc., as to other excessive degrading acts and impulses. A spice of logic sprinkled with clinical observation would clarify the conclusions of many medical observers who are just now claiming medical attention to their vagaries in the *Mundus Medicinae*.

Dr. C. R. Greenlief has been appointed by Surgeon-General Sternberg Sanitary Inspector of the Army, having full charge of the Sanitation of Camps, and Inspector of Military Hospitals.

Thyroidectomy in Graves' Disease—A Correct Criticism.—The new periodical, the *Medical Dial*, in its initial number correctly criticises the new proposal to cut out a neuropathy. The results do not justify further resort to this unscientific surgical suggestion. The rest, new psychical impression and hope inspired, may help some to recover of Graves' disease after extirpation of thyroid, but such as would recover under such circumstances would recover better without the knife. The thyroid is not an organ to dispense with in the human economy any more than the badly treated ovary is. Six months of rest aided by a reconstructive or tranquilizing neurotherapy and changed environment will result in cure in most cases without the surgeon.

In the *Medical Record* of August 2nd, Dr. Arthur Booth reports his results obtained by thyroidectomy in eight cases of Graves' disease. The operation was followed by cure in

five of the eight cases, one death, one improved and one not improved.

There seems to be considerable surgical testimony in favor of, and an increasing tendency to resort to partial thyroidectomy in this disease, especially in those cases in which the thyroid enlargement is marked and precedes the tachycardia. It is worthy of notice that Booth says "One has been improved", and in this case it is worthy of notice that the operation was performed only six months ago, so that we may expect further improvement and perhaps a cure, for the longer the period after the operation, the better appear to be the results. As profound a clinician as Hilton Fagge, after summing up the prognosis in Graves' disease, long ago, said: "The only possible inference seems to be, that most cases end in recovery."

The reviewer has observed several very troublesome cases which recovered in from eight months to two and a half years, upon hygienic and various modes of treatment. Hence until the results of surgical treatment of this affection are more decided than they yet appear, some suspicion must be entertained that the results are coincidents.

The Automatism of Epilepsis and Epileptoid States is well illustrated in an important possible medico-legal light in the following statement made in the letter of a distant patient of Dr. Hughes':

"One day in the bank just as I was going home to dinner, I leaned over to a friend of mine sitting in the bank and asked him to go along home. He declined, and I could not remember anything else until I came back to the bank, when I attended to the business of cashier as before. I did not, however, eat any dinner, at that time I had gone longer without medicine than I had ever since you had begun to prescribe for me."

Here is an apparently normal, automatic action of the brain and mind from pathological cause, the patient being under treatment for recurrent paroxysm of grande mal, kept in abeyance by treatment. The customary meal was omitted, but he might have eaten and yet have been in the same abnormal though apparently normal mental state. The essential epileptic lapse of memory is apparent in the patients confession, but how could it be proven? The fact in this case is undoubtedly, because we know the history and the cause. But suppose the law had been violated by this patient; a crime committed during this temporary psychical interregnum in the normal mental reign of this patient?

How generous would the law be? How many pseudo experts, might be found, who, not having the expertness of clinical experience in the domain of alienism to properly judge of aberrant mental states, would decide this question boldly from their own inner conscience and say "he knows what he was doing." "Do not his actions show it?" "He acted as he always did save that he forgot his dinner."

There be more things in the heaven and earth of real alienism than are dreamt of in the pseudo philosophy of the dilettante psychological expert who imagines that insane mental states are matters of ratiocination rather than of clinical observation, as other diseases are.

American Medico-Psychological Association.

—The annual meeting of the American Medico-Psychological Association will be held in the city of New York on Tuesday, Wednesday, Thursday and Friday, May 23d to 26th, 1899. Henry M. Hurd, M. D., President, Baltimore, Md.; C. B. Burr, Secretary, Flint, Mich.

Caution About Antipyrin.—*Wiener medizinische Blätter* says one should not prescribe antipyrin in combination with substances containing nitric acid amyl nitrite, spiritus ætheris nitrosi) since they form a light green isonitroso-antipyrin; calomel and antipyrin form a poisonous organic compound. Antipyrin and salicylate of sodium, if mixed together in powder form a paste, though in solution, they are not incompatible. Antipyrin and chloral form an oily solution. With B-naphthol, antipyrin forms a moist mixture.

With all these serious risks of incompatibility and death to our patients, is it worth while attempting to greatly extend the use of so dangerous a drug for internal administration? especially since we have accessible other equally efficient and really less depressing antithermics. Some medicines like some words might well become obsolete even though "made in Germany," "the home of the brave and the free" therapeutic innovator.

Proprietary Push.—The American Proprietary Pharmacist, besides being the acknowledged help to the medical profession that he has proven himself to be to the world, has established a reputation for push and confidence in himself and his specialties, that would have beaten Shafter in the taking of Santiago. He is a taking fellow and takes his name to every market in *terra firma* and one firm has lately stormed the battlements of Heaven. Read:

"When physicians are so situated that they cannot obtain the medicine through the drug stores, we will forward the

same by mail, postpaid, in two ounce packages on receipt of the price, \$2.00."

"God be glorified! Spread the news and save the tens-of-thousands that are yearly dying * * *"

National Board of Health.—A wide awake St. Louis daily newspaper thus wisely comments: "The plan which Dr. C. H. Hughes broached in his capacity as member of the St. Louis Board of Health, for the prevention of the pollution of the rivers of the Mississippi Valley by Chicago's sewage, deserves great consideration.

There is every reason to believe that Chicago will not give the plan the consideration it merits, and it is certain that as matters now stand, St. Louis has no power or influence to obtain such consideration for it.

The incident shows that some higher authority than State or city should take charge of the interstate problem of the pollution of rivers. A National Board of Health, with power to regulate such things, is one of the crying Federal needs. Such a department, with the proper Cabinet member to represent it, or such a subdepartment under, say the Department of the Interior, would materially assist the progress and development of the United States. Such a board has special reason for existing now that intercourse is more free between Cuba and the United States, and the consequent necessity greater for sanitary precautions to prevent the spread of yellow fever.

The influence of the entire country should be thrown toward securing it."

We are gratified to see the daily press of this nation taking hold of the project for a National Board of Health or Bureau of Sanitation and a physician in the Cabinet. They are needed.

Shakespeare's Last Illness.—A victim of a "merry meeting" with Jonson and Drayton.

The work of the one hundred and twenty-sixth session of the Medical Society of London was begun on Monday evening at the rooms of the society, in Chandos street, by a short introductory address from the president, Edmund Owen, surgeon to St. Mary's Hospital, who remarked that among the many treasures of their library were fifteen volumes of transcript, which formed the diary or commonplace book of the Rev. John Ward, M.A., Oxon, who was vicar of Stratford-on-Avon from 1662 to 1681. Having taken his M.A. degree in 1652, Ward left Oxford for London to study anatomy at the Barber-Chyrurgeon's Hall, in Monkwell

Street (where Dr. Scarborough, the friend of Harvey, was giving demonstrations), and to acquire a general knowledge of the healing art.

Not very many years ago it was quite usual for the professions of divinity and medicine to be combined in the one individual, and it was to be admitted that the custom still lingered in the persons of certain vicars and vicaresses, who were unable to keep themselves from dabbling in parochial medicine and quack remedies. Not a few country villages still contained such unorthodox practitioners, who dispensed medical advice to the peril of their too-confiding parishioners, and often to the annoyance of the local doctor. But the Rev. John Ward was not an empiric of this sort. He had worked diligently to acquire a knowledge of the medical profession, and was doubtless well fitted to practice it under the license which he probably received from his bishop at the time that he entered upon his clerical duties. In his diary, Ward asked himself specially to remember that he must "studie such diseases as are peculiar to women, and also to children, so as to be ready at them when I come into the country." He evidently meant to be a good, all-round man.

But the point to which Mr. Owen specially referred was that on taking up his work in Stratford-on-Avon, in the forty-sixth year after Shakespeare's death, Ward must, both as vicar and doctor, have been told of many facts concerning the bard by those who had been intimately acquainted with him. Unfortunately, he did not record much about him in those memorandum books; what he did say had been seized upon by the industrious Halliwell-Phillips, and duly recorded in his "Life of Shakespeare."

This was one of the extracts, and, coming as it did from a highly educated man, who had lived in the village of the Shakespeares, it was of undoubted biographical value. "I have heard that Mr. Shakespeare was a natural wit, without any art at all; he frequented plays all his younger time, but in his older days lived at Stratford; and supplied the stage with two plays every year, and for that had an allowance so large that he spent at the rate of £1,000 a year"—which in those times was a very considerable amount, corresponding, perhaps, to £3,000 or £4,000 of to-day. Another extract ran as follows: "Shakespeare, Drayton and Ben Jonson had a merry meeting, and, its seems, drank too hard, for Shakespeare died of a feavour there contracted." In those times, said Mr. Owen, it was customary to call obscure diseases "feavours," just as they

are now called "influenzas" or "neuroses," but whatever the actual cause of Shakespeare's death might have been, it was evident that local tradition ascribed it, rightly or wrongly, to the effects of that "merry meeting." One had only to think of these three cheery friends together—Shakespeare, Ben Johnson and Drayton—to be assured that it was. A pity, however, that Ward, unperceived, could not have been there with his note book.—*London Telegram.*

Medical Expert Testimony.—A Suggestion.—

The *Albany Medical Annals* for October contains an article on "Medical and Other Experts," by St. Clair McKelway, LL. D., regent of the University of the State of New York, in which the author thus indulges in the customary adverse reflections on the medical expert witness: "That the partisanship of the employment of experts should cease; the expert should be summoned by the court alone, and not by the attorney of either side under color of the court's authority; as many experts should be judicially summoned as the judge thinks the rights of all interests in the case will require; that, if necessary, a list of experts should be nominated to the judge by each side of the case, from which list the judge should select those whom he thinks could best be chosen; that the propositions submitted to these experts and their replies should be in writing; that the investigation of the questions upon which the views of the experts are required should be conducted by commission, not in open court; that the judge himself should be the final authority to place the net truth, gathered from all the expert testimony, before the jury with the same precision, authority and impartiality as he expounds to them the law; that the source of remuneration should be the public treasury, and that the measurer of the value of the time, labor, knowledge and reputation of the expert witness should be the judge."

Why are judges so much more trustworthy than doctors? And why these continually recurring reflections on the character of medical men before the courts? Medical men as experts are as honest and competent as the men of other professions. Intelligent cross examinations usually discomfit the pseudo expert and the evil is working out its own remedy. Pretenders will soon cease to pretend. Besides, there are constitutional rights, securing to every one on trial, all the witnesses, expert or otherwise, essential for his defence, which can not be legislated away. This crusade against the medical expert is unseemly and unjust. He is as good and as trustworthy as other experts and as knowledge as

to what is necessary to expertness in medical testimony becomes more diffused with the profession and public, the egotistic false expert will cease to be.

A Valuable and Opportune Remedy.—This is the time of the year when grippe, neuralgia, dengue and "bad colds" abound—in fact, are all but universal, and the physician is kept busy prescribing for them. Among the favorite remedies in such cases is Laxiquinin, which, while of comparatively recent introduction, has already acquired an enviable reputation as a remedy in grippe, neuralgia and dengue and allied ailments. Laxiquinin, if given in the beginning of a cold, will abort it, while it is invaluable in the treatment of grippe, dengue and other catarrhal and malarial diseases, from which it takes away the chief terror—the "back-bone" characteristics. Laxiquinin, Toniquinin and Iquinin are manufactured by the Iquinin Chemical Co., of St. Louis.—*National Druggist, Dec. '98.*

Dr. F. A. Todd died of rabies at the Presbyterian Hospital from the effects of hydrophobia, Chicago, Sept. 30th. His death was the outcome of being attacked by a rabid dog on the lawn of the Ohio State Hospital for the Insane, at Toledo, Ohio, of which Dr. Todd was assistant superintendent.

Resolution on Vivisection.—At a recent meeting of the Joint Committee of Scientific Societies of Washington, D.C., on vivisection, the following resolution was adopted: "Resolved, that the Secretary be authorized to call the attention of the prominent medical and scientific journals of the country to the importance of the meeting of the American Humane Society to be held in this city December, 15th, and to request that editorial notice be taken of the danger that the influence likely to be exerted at that meeting may cause the vivisection bill now pending in the Senate to be called up and passed."

Readers of this journal are requested to ask their respective Senators and Representatives on this subject.

Why and How the Brain Works.—The power of the brain to endure and its propensity to break under pressure is a matter of hereditary aptitude. Some brains, like mules, refuse to go beyond a certain pace or point, and no goading or coaxing can induce them to overwork. Other brains are like mettled horses. They can be spurred to complete exhaustion and profound collapse, falling dead under the

whip or spur. Other brains are like oxen, slow, limited, steady, but sure in action.

The mule-like brain can, but won't; the ox-like brain can't and therefore will not be overworked, while the spirited and willing horse brain, like the disposition of the horse, can be worked to death.

In modern life there are many willing spirits among ambitious mental toilers, who, seeking fame and realizing that labor only brings success, are unremitting workers, till nature succumbs and the struggling brain breaks down in insanity under great pressure. The individual is fortunate if he have no more vicious inherent aptitude than to take on nervous depression, or neurasthenia, under pressure, and if he have added none of the usual vices of public life, of alcoholic stimulants, late suppers, to hasten collapse of nervous energy under high professional pressure. For to be dowered with a bad brain heritage—heritage of tendency to instability, and to add to that vicious brain-breaking indulgences, is to doom one's intellect to destruction. Recuperation is often possible after the first breakdown, if vices have not added to the breaking pressure and inherent weakness.

Poor McCullough and J. K. Emmett, in the dramatic profession, are conspicuous and warning illustrations, while bright, brilliant, beautiful, little Victory Bateman is an example of pure and simple brain-break under crushing over-work and brain strain that ought to have been spared her. The sordid avarice of the box office killed her, innocent perhaps of the certainty of collapse, but all the same it killed—

“For evil is wrought by want of thought,
As well as want of heart.”

But the box office is not the only cause of actors' and actresses' breakdown. They drop out under the dissipating pace that kills. Long hours of social dissipation after the play, stimulant drug habit from self-medication to postpone the headaches and tired feeling and overcome the exhaustion temporarily of their strained lives. In this category fell Courtney Barnes, whose last act, like McCullough's was in asylum for the insane, and hosts of others equally unfortunate, who lived, if they did not love, not wisely, but too fast.

The willing horse was worked to death, or, what is near the same, to perilous brain-break, with a possibility of mental aberration and probable finale of dementia or total obliteration of mind.

It is a pity to see American histrionic talents thus destroyed through the greed of the box office.

The professions are full of such victims. A restless, towering ambition, with often an insatiable brain organism, bequeathed by an overworked, and, maybe, overstimulated ancestry, projected into an environment of competition and struggle for existence, often prematurely begun and sometimes too long maintained before success appears, prepares many of our public people for tragic breakdown at the threshold of ambition's fruition.

It is unfortunate to come into the world and have to go through it in any of the great professions, like medicine, law or the stage, handicapped by a bad mental organism; that is by a brain which has inherently unstable tendencies, predisposing to prematurely break under the ordinary strain of life's burdens, cares and duties or even of its pleasures. But it is especially pitiable to see one break down because of extraordinary burden who might have escaped under ordinary strain.

Whether Victory Bateman will recover is a question for her physician to answer. To answer it intelligently, I should have to confer with him and to have knowledge of factors essential to correct diagnosis other than those made public—her antecedents, life history and ancestral make-up; her present physical condition and the mental phases of her malady, together with her progress to date, as to brain rest and proper environment.

The preceding editorial was suggested by thefeat of a slender, delicately framed, diminutive actress, having strong hereditary memory, aptitude and marked inherent stage proclivity, both of her parents having been players of ability and repute. She may be said to have been born and reared and daily fed upon theatre environment. This girl was what the management of theatres would call one of the cleverest and most versatile of her profession. Impressionable without limit and capricious, volatile, excitable in her nervous system as a consequence of the enormous mental tasks imposed and never refused, because they were simply new impressions and not conscious burdens to her intensely receptive brain, which can receive until it breaks with the pressure of the strain, she is surely on her way to the asylum where such overworked prodigies always land unless they fall victims to intercurrent disease.

In twenty weeks this actress is said to have memorized and properly placed in different plays one hundred and forty thousand words. Here is the record computed by the daily press of this girl's marvelous feat of verbal memory to which must be added the many details of various stage attitudes

and costumes and incidents to be mastered and remembered by this delicate girl asked to carry more than a mental giant's burden.

VICTORY BATEMAN'S MENTAL FEAT.

	Words.
Mrs. Winthrop, in "Young Mrs. Winthrop"	7,000
Flordilisa, in "A Fool's Revenge"	6,750
Louise, in "The Two Orphans"	7,250
Cecile, in "David Laroque"	6,500
Adrienne, in "A Celebrated Case"	7,000
Camille, in "Camille"	7,300
Carmen, in "Carmen"	7,200
Portia, in "Julius Caesar"	6,500
Eliza, in "Uncle Tom's Cabin"	7,500
Ruth, in "The Wages of Sin"	6,000
Juliet, in "Romeo and Juliet"	7,500
Dora, in "Diplomacy"	6,900
Portia, in "The Merchant of Venice"	6,600
Ophelia, in "Hamlet"	7,000
Mrs. Gregory Graysin, in "The Tragedy"	6,500
Desdemona, in "Othello"	7,000
Alice, in "In Spite of All"	7,500
Frou Frou, in "Frou Frou"	7,000
Vera, in "Moths"	6,000
Roxane, in "Cyrana"	8,000

Some of the papers, notably the *St. Louis Post-Dispatch* and the *New York Sun-Journal*, seem to think it remarkable that the end of this unfortunate girl should have been predicted by the editor of this journal. But such prognostic is founded in the principles of neuroprognosis, in the limits which neurophysiology imposes on the capacity of the psychic neurosis.

The brain can not transcend its physiological limits even though the soul be willing to impose the burden. It will first protest in morbid excitability, insomnia, unrest, pain and in changes of display readily discernible to the skilled psychiatrist, and the records of psychiatry warn us plainly of the limit in the brain wrecks gone out before to ruin on the sea of reckless, unwise, unlimited mental effort. It is a little remarkable to the alienist and the neurologist, in view of the universal dread of death and the lunatic asylum, to see the eagerness with which professional and business men and women strive and strain their brains to the verge of union between mind and brain, soul and organism.

In the race of modern life there seems a constant striving, by violation of healthy brain life, to effect a severance of normal mind from brain.

For twenty weeks she has played "leading business" for six nights and two matinees, and played a new part

every single Monday night. She played "Young Mrs. Winthrop" eight times the first week of the season, and she rehearsed Flordilisa, in "The Fool's Revenge" every day during the week.

It would take a person of average intelligence at least two weeks of almost constant study to memorize that part. Miss Bateman learned it perfectly in a few hours snatched from her sleep.

Last week she undertook the part of Roxine, in "Cyrano de Bergerac", in Chicago, and her brain gave out. New plays mean new dresses and new "effects".

While Miss Bateman was playing Flordilisa she studied and rehearsed Louise in the "Two Orphans". While she played Camille she studied Carmen. While she played Carmen she studied Portia, and so on through the list of "brilliant performances" advertised by the manager of the theatre where Miss Bateman was playing. There was not one day of rest between these days of frightful work.

There was not one hour of relief from the anxiety which hovers over a conscientious actress like a pall all the time she's trying to "work up" a new part.

New dramas were rehearsed and re-rehearsed. New dresses were planned and fitted and rushed through the dressmakers' hands—any way and every way—to be ready for the next part. New ideas, new characters, new methods to consider, worry over and debate; not one minute of healthy, rational, real life.

One hundred and forty thousand words learned and interpreted in twenty weeks! Twenty separate and distinct impersonations in as many weeks.

The nervous strain of the acting left out, the constant bodily fatigue unconsidered, the stimulation of the emotions, entirely uncounted, the lack of sleep, the lack of exercise, the lack of any one of the simple balances that hold the wheel of reason in its place—all these things left out of the reckoning, still there remains an appalling task for any human brain to master. The wonder is not that Miss Bateman is tired, but that she has held out under the strain so long.—This news writer talks like a neurologist.

A Singular Phobia omitted from the preceding paper on certain phobias of psychic neuratology came to our notice in a mild form of erotopathic perversion.

The party is a young man of twenty years attached to a man somewhat older but not over twenty-five years, I should judge, though I omitted asking the precise age when

I was consulted. This couple have lived together—slept together—from early youth and are close, warm friends.

Nothing immoral has been confessed between them, but absence for any length of time causes intense longing on the part of the younger for the older, and the fear of being parted from him causes him much mental disquiet. He is troubled with a fear of becoming a pervert and of failing mentally.

Both are manly men with common manly tastes for many sports, though tenderly regardful of each other—much as Rienzi loved his brother or as Damon and Pythias loved. These young men have also artistic and musical talents, are fond of boxing and fencing and are robust and manly.

The older being a bibliophile, has read Kraff-Ebing and through much study of the subject and over-mental work, became somewhat neuropathic and morbidly alarmed. A sort of hypochondriacal melancholia with erotopathic insanity as an ultimate fear came on with the failure of nerve tone but disappeared under rest, tonics and sedation.

The Didactic Lecture.—Among the editorial notes in the *Medical Age* occurs the following quotation and comment which we approve: An editorial writer in the *American Medico-Surgical Bulletin* regrets the decadence of the didactic lecture, and even goes so far as to ask if we are not getting too much clinical teaching. He quotes a recent address of Prof. Von Ziemssen, of Munich, who says: "The idea that the clinic can replace systematic lectures is absolutely foolish, but unfortunately it is very common among the student youth; and on the other hand the studies at home can never replace the spoken words, all the less if the latter are illustrated by demonstrations with figures, systematic drawing, models, etc." There is little doubt that the student who comes to the clinical lecture without knowledge of pathology, or destitute of any definite perceptions regarding the general scientific outlines of disease, can derive nothing from the clinic, save a few empirical impressions. There is undoubtedly good ground for the warning that error is now being made in an opposite direction, and while students may not be getting too many clinics, they are often getting too few lectures upon the fundamental principles of medicine or the scientific aspects of disease.

The Popular Mariani Wine Company sends us the following letter, from Mavrogeny Pacha, Physician-in-Chief to His Majesty the Sultan, showing the esteem in

which distinguished physicians hold the well-known wine "Vin Mariani", which our readers will be pleased to read:

"Yildiz Palace, Constantinople, July 2d, 1895.

"Sworn enemy of the proprietary medicines which have of late years inundated all countries, and whose only object is the acquisition of gain for the proprietors, without the least benefit to science nor to humanity, I make a single exception in favor of one preparation as meritorious, and which is thoroughly praiseworthy. I refer to 'Vin Mariani', which, without guise of deceit and mysticism, is valuable in its fortifying qualities, and has conferred high benefits upon weak and suffering humanity.

"[Signed] MAVROGENY Pacha,
"Physician-in-Chief to His Majesty the Sultan."

M. Mariani has gathered the written opinion, clinical notes, etc., of many thousand physicians from all parts of the word, showing the universal high opinion of practitioners who have subjected "Vin Mariani" to thorough test.

Bovinine in Hospital Practice.—Through the courtesy of Dr. T. J. Biggs, of Sound View Hospital, of Stamford, Conn., we are placed in possession of some records of medico-surgical practice with auxiliary blood supply—haematherapy—at this institution.

These records make an excellent clinical showing of the auxiliary therapeutic value of Bovinine in medical and surgical practice, in fact, a remarkably satisfactory exhibit of curative results both from external employment and internal administration of this haematic reconstructive.

Tilden's Hydrocyanate of Iron, and Compounds, supplies in convenient form, this recently revised and appreciated remedy for epilepsy and other atonic spasmodic states.

Forty years ago a favorite prescription for epilepsy of Prof. Magagin, of the Keokuk Medical College, was a pill of ferocyanaret of iron and valerian. Tilden & Co. have sought to meet the increasing want of the profession in offering several compounds of this remedy in reliable form. See advertisement.

IN MEMORIAM.

JOHN B. HAMILTON IS DEAD.—In the death of the distinguished editor of the *Journal of the American Medical Association*, the sad event occurring from typhoid intestinal hæmorrhage December 24th, 1898, the profession of America, the American Medical Association and the faculty of Rush Medical College have sustained an inestimable loss.

Dr. Hamilton fell in the thickest of life's battle and too early in the conflict for so valuable a man to die. He was but fifty-one years old. Yet he had done much and was doing too much for the strength of any man when he fell ill. Besides being the editor of the great journal of the association which he edited well, he was the superintendent and physician in chief of the Elgin Illinois State Hospital for the Insane and he filled a surgical chair in a great medical college. Dr. Hamilton served his country in the latter part of the civil war and later in the regular army of the United States as a military surgeon. Entering the Marine Hospital Service in 1876, he soon advanced to the Surgeon Generacy of that service which, in 1892, he resigned for the position he filled as head of the American Journal to the day of his untimely death.

While Surgeon General of the Marine Hospital Service, Hamilton also filled the chair of surgery in the University of Georgetown.

Dr. Hamilton was a man of energy on which, unfortunately for him, he placed no bounds. Ambitious, zealous, steady of purpose he accepted every responsibility which fell in his way. He was even President of the Board of Trustees of the Chicago Public Library, a trust which he discharged—as he did all other responsibilities—with fidelity and honor. To all this work was added exacting hospital work and the labors of a large private practice.

Conscientious, ambitious, indefatigable, discharging every duty with a sacred sense of honorable obligation to duty and to every environment, he lifted the great journal of the American Medical Association into prominence and high appreciation, but under it and other burdens he fell a victim and a martyr to overmuch responsibility. He was a good physician to others but not to himself. His precepts for longevity never found personal application. His life was too ambitious and too unselfish. The profession needed him. He loved the profession and he followed the beck of duty to his doom.

The Superintendent and Trustees of Northampton Lunatic Hospital pay the following tribute to First Assistant Physician Holmes, lately deceased in that institution:

DR. CHARLES M. HOLMES, our first assistant, died October 7th, 1898. It seems fitting to add here a tribute to his faithful services to the hospital.

In the nine years of his residence here he had, by his devotion to the interests of the hospital and to the welfare of the patients, won the esteem of all who were associated with him.

He was an earnest student in the specialty which he had chosen for his life work and which he liked well, and was looking forward to the coming year with pleasure because of the better facilities for his work which he hoped to enjoy.

At the time of his death he was well equipped by study and experience to fill the position he occupied with credit, and to the advantage of the hospital.

Of a genial nature, he possessed many qualities which endeared him to the patients, and which engendered in the friends of patients a feeling of confidence in the institution.

By his death the hospital has lost a faithful officer; the officers, a loved associate; the patients, a friend.

REVIEWS, BOOK NOTICES, ETC.

AMERICAN PHARMACEUTICAL ASSOCIATION. At the forty-sixth annual meeting of the American Pharmaceutical Association, held in Baltimore, August 29th to September 3rd of the present year, the following report was unanimously adopted:

During the past year no action has been taken by Congress on the subject of Metric System of Weights and Measures. The bill making this system the legal system in the various departments of the Government remains in the hands of the Committee on Coinage, Weights and Measures, where it was sent more than a year ago. This lack of action, as you are all aware, was caused by the attention of Congress being given to measures made necessary by the war with Spain, and to secure a successful termination of the same. Your Committee, however, are pleased to report substantial progress in the adoption and use of the Metric System by the world at large. The most important advance in its recognition is the use of the Metric System of Weights and Measures in the recently issued British Pharmacopoeia; and, although the old Imperial System has also been given in this work, it is probable that the action taken is the stepping-stone to the exclusive adoption of the Metric System in future editions of this authority. In addition to this, a bill has passed both Houses of Parliament legalizing the system in Great Britain, and probably before this date has received royal assent. Russia has also made the adoption of the Metric System a certainty after a stipulated date.

It is to be regretted that our own physicians do not more generally use the Metric System in their every-day prescription writing, as was shown by a paper read by Prof. Whelpley at our last meeting; our American physicians do not take up its use as rapidly as we would expect from members of a profession so progressive in science and in investigation.

This is no doubt largely due to the fact that medical students are still taught mainly in the old system of Weights and Measures, and the difficulty they experience in adapting new terms and calculations to the dosage which they have been taught, prevents their serious consideration of the subject.

We can hope for no rapid progress in the Metric System in medicine until our medical schools and colleges teach this system alone, and medical authors at least give it the preference rather than stating the equivalent in Metric terms. In view of this fact your Chairman would suggest that a resolution be passed by this Association to be presented to the American Medical Association at its next meeting to be held at Columbus, Ohio, requesting the American Medical Association to use its influence in bringing

about the exclusive use of the Metric System of Weights and Measures by all colleges and schools of medicine recognized by them in the United States.

This would require only such men as are engaged in scientific instruction in teaching medicine to change their old established methods of dosage and calculations, and all students coming under their instruction would from their entrance into the college know no other system of weights and measures.

In accordance with this suggestion, a resolution covering the proposition is herewith presented:

WHEREAS, The Metric System of Weights and Measures is used exclusively in the United States Pharmacopoeia, and is official in the Pharmacopoeias of nearly all other nations, and

Whereas, It has become the almost universal system of Weights and Measures in scientific calculations; be it

Resolved, That the members of the American Pharmaceutical Association request the American Medical Association to use its influence with all colleges and schools of medicine recognized by them in the United States, to use exclusively the Metric System of Weights and Measures in the instruction of students, beginning with the classes entering said colleges and schools in the college year of 1900.

DR. JOHN HUNTER'S GRUFF AND TENDER SIDES. John Hunter, the great surgeon whose work in dissection and practical experiment gave the medical practice of the last century an incalculable impetus, was rough or smooth in his dealing with new pupils, according as he found them pretentious or humble. He was not unwilling to "answer a fool according to his folly." One morning a very young man mentioned quite casually that he had some thought of giving a course of lectures on comparative anatomy.

"Sir," said Hunter, dryly, "that is a bold undertaking. I once had thoughts of doing the same thing, but the difficulties and necessary qualifications were so great that I did not think myself competent. You, I dare say, may feel yourself quite equal to it."

Another youth came to town and sought him out with the hope of receiving lessons from him.

"Well, young gentleman," said Hunter, when the ceremony of introduction was over, "so you are come to town to be a surgeon? And how long do you intend to stay?

"One year," was the reply.

"Then," said Hunter, "I can tell you that won't do. I've been here a great many years, and worked hard, and I don't know the principles of the art."

After some further talk the surgeon decided to give the lad a trial, and made an appointment with him for the next day; but it was at no easy hour.

"Come to me to-morrow morning, young gentleman," he said, "and I will put you in the way of things. Come as soon after four as you can."

The youth kept the appointment, but early as it was Hunter was already busy in dissecting beetles.

But not all young men were snubbed or lectured at the start. To one who showed the proper spirit of energy and humility Hunter was gentleness itself.

A pupil at one of the hospitals one day called and requested the great man's acceptance of a very delicate and well-executed preparation of the internal ear. Hunter was delighted with it, insisted on his staying to breakfast, and in the course of the meal said to him:

"Any man who will set about a business and do it as you have done that ear may do anything he pleases in London."

Then, finding that the young man had not been attending his lectures, he asked the reason.

"Because," said the youth honestly, "I'm not advanced enough to profit by them."

"That, sir," said Dr. Hunter, "is very complimentary, "but you must allow me to give you a perpetual ticket, so that you may come when you will." —*Youth's Companion*.

HEALTH COMMISSIONER Max C. Starkloff's Annual Report, the twenty-ninth, of the Health Department of St. Louis, is a handsome, readable and instructive production, setting forth a record of zealous work and good sanitary recommendations for the welfare of St. Louis. The sanitary work done by the Board of Health of St. Louis during the past year has been large but it would have been greater had the recommendations of the Board of Health always zealously urged and advocated by the Health Commissioner been all fully carried out by adequate appropriation by the city legislative assembly.

A singularly unwise notion prevails in the departments of the city which hold and vote the funds, that sanitary matters, like funerals, can be provided for last, and this foolish notion leads to a good many needless funerals. A dead citizen, it is true, is no further trouble, but live citizens pay taxes and dead paupers have to be buried at the city's expense, when some of them might be cured and sent to work again.

But neglect of sanitary legislation in a large city affects not only the poor, it causes contamination and disaster to the rich. The financially strong and guilty who could remove unsanitary ruts do not go unpunished.

Epidemics and germ propagated disease may get into an alderman's family as readily as in a tramp's kitchen, if quarantine measures are officially neglected. Consumption germs in milk may lodge in councilman's lungs or kill the king of Kerry Patch as readily as a suckling infant in Clabber Alley.

The dignity of the city assembly is no exemption from the incursions of the deadly microbe and neither beer nor boodle will act as antidotes.

It is a lamentable shame that city Health Boards have to fight so hard to induce the people and the City Fathers to protect their health from the insidious foes of life, in the milk, water, food and air of cities.

WE HAVE LOOKED OVER WITH PLEASURE a copy of the new edition of *Gould's Pocket Pronouncing Medical Dictionary*. This little book has been very much improved in every respect. The number of words has been almost doubled and the vast experience of the author in dictionary work has enabled him to perfect its details, to add many words new to the science and to omit un-

necessary and obsolete terms. Meriting special mention are: The simple and practical system of pronunciation, the large percentage (about 75%) of words specially pronounced, the concise definitions, the many valuable tables especially that of Clinical Eponymic terms is a novelty that in itself is worth the one dollar asked for it; the style in which the book is made, the type, shape, printing and binding; the convenient size of the book. By the use of specially made thin paper, narrow margins, the exclusion of rare and obsolete words, etc., the bulk has been so reduced as to be properly called a *pocket dictionary*,—"infinite riches in little room".

3500 copies of this book have been sold in advance of publication. The publishers have received orders aggregating several thousands from England, Australia, New Zealand and Canada, and no less an authority than the *London Lancet* in its issue of September 3d, the students' number for 1898, recommends Gould's Dictionaries only, all others, English and American, being ignored. P. Blackiston's Son & Co., Philadelphia, are the publishers.

THE BERLINER KLINISCHE WOCHENSCHRIFT comes to us irregularly. A late number contains the following, with an otherwise interesting table of contents:

INCOMPATIBILITIES.—The *Berliner klinische Wochenschrift*, "Ueber einige Receptsunden und ihre Folgen," Professor Binz, of Bonn, calls attention to the following incompatibilities: Preparations of iron with tannic acid produce ink; chloroform in glycerin or tincture of iodine in water will not mix; sulphonal is very slightly soluble in water; calomel with potassium iodide results in the formation of the irritant mercuric iodide; tincture of iodine and mercurial ointment applied locally and together produce intense irritation; permanganate of potassium added to syrups causes a brown coloration, due to the abstraction of oxygen. Combinations of potassium chlorate with sulphur or tannic acid, and of permanganate of potassium, sulphur and carbon, should not be prescribed.

HAY FEVER. Its Successful Treatment by Hollopeter. W. C. Hollopeter, A. M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College, of Philadelphia, etc. P. Blakiston Son & Co., publishers, 1012 Walnut street, Philadelphia.

The soundness of the author's views upon the theme of his book may be gleaned from his opening remarks therein, all we have space to give and quite sufficient to commend the little treatise to discriminating clinicians. The idea of an external irritant in hay-fever pervades most views of it. There can be no doubt, however, that there is usually an underlying systemic condition which renders individuals susceptible to the disease. It may, in addition, be accepted as conclusive that the nasal abnormalities found in hay-fever subjects are as often incidental as causative. "The condition is always one of lowered resistance general or local."

THE DECEMBER NUMBER of the *Tri-State Medical Journal and Practitioner* comes to us in a handsome new dress and under new auspices and with an attractive table of contents. Dr. James Moores Ball retiring with a graceful and

meritorious poem entitled, "Poor Doc Jones" and Dr. Warren B. Outten succeeding to the editorial pen. The new editor who makes his editorial mark on "Man's Inherited Martyrdom" and "Dr. Jim's Atlantean Tumor" two meritorious productions befitting the well-known ability of the new new editor. The "Battle Hymn of the Republic," a poem of decided merit written by Major Thos. O. Summers, M.D., on board the Resolute after the destruction of Cervera's fleet and Frank Lydston's "Faithful Unto Death" add to the decided literary merit of the volume before us, while by Ohman Dumesnil, Edward Parrish, Weber Jay, H. S. P. Lare, J. J. Connor and an entertaining lot of editorials are the attractive features of the Christmas edition. Merit and talent and science, sparkle in the number before us.

THE NEW VOLUME OF THE SURGEON GENERALS INDEX-CATALOGUE. The third volume of the second series of the *Index-Catalogue of the Library of the Surgeon-General's Office, United States Army*, has been received at this office.

The *New York Medical Journal* gives the following analysis of its contents: It consists of 1,100 pages of text, and carries the vocabulary through the letter C. The librarian, Surgeon James C. Merrill, states that it gives 11,112 author titles, 10,636 book titles, the titles of 34,314 journal articles, and those of 677 portraits. Like all the preceding volumes, it is most creditable to the surgeon-general's office.

CLEVENCER'S MEDICAL JURISPRUDENCE OF INSANITY OR FORENSIC PSYCHIATRY is accompanied by an exhaustive presentation of all the decisions of all the courts upon the questions involved.

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ORIGINAL CONTRIBUTIONS.

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**OUTLINE OF PSYCHIATRY IN CLINICAL
LECTURES.***

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

By DR. C. WERNICKE,

Professor in Breslau.

I.

MENTAL DISEASES ARE BRAIN DISEASES, BUT YET DIFFER FROM THEM PRACTICALLY. PROJECTION SYSTEM AND CENTRAL PROJECTION FIELDS. ORGAN OF ASSOCIATION. BRAIN DISEASES TO BE DEFINED AS: DISEASES OF THE PROJECTION SYSTEM, MENTAL DISEASES AS DIFFUSED DISEASES OF THE ORGAN OF ASSOCIATION. CONTRAST OF PRIMARY AND SECONDARY IDENTIFICATION IN THE MATTER OF SPEECH.

THE subject for our consideration, the science of mental diseases, is, in reality, a part of internal medicine, but owing to its practical importance and for other reasons of a more extrinsic sort, it has at all times demanded and received

*Translated by Dr. W. Alfred McCorn.

special treatment. Unfortunately it is this part, which has been backward in its development and is now in the position occupied by general medicine a century ago. You know that then a developed pathology in our modern sense, *i.e.*, one based on the morbid derangements of function of individual organs, did not exist, and that therefore certain symptoms, which recurred with special frequency, if also in the most diverse groupings, were given the importance of disease types. At this stage the medical knowledge of diseases did not far exceed that now prevailing among the laity, when cough, palpitation, fever, jaundice, chlorosis and emaciation were considered true diseases. This is exactly the present state of psychiatry, at least among the majority of alienists, its representatives. Certain symptoms of special pregnancy form for them the real nature of the disease, so a depressed state of the emotions in the broadest sense the condition of melancholia, the exalted mood with an excess of movements that of mania, and the like. Now a whole multitude of these supposed diseases are differentiated. But as naturally the combination of symptoms is by far more varied and complex, so the necessity arises of making the artificial boundaries, first broader, then narrower, which has been done by different observers in very different ways; in spite of all efforts to bring the cases of disease artificially into a form, so that they fit into the scheme, there still remains a large number which cannot be adjusted and no way be made to fit. Indeed, he who judges impartially and possesses the requisite experience, finds that *the great majority* of cases will not conform to the usual mode of consideration. Therein I am pleased to admit that psychiatry has recently made a material advancement. The work of men like Griesinger, H. Neumann, Kahlbaum, Meynert, Emminghaus and others has not been in vain. But even these prominent investigators have succumbed to the temptation of confounding individual symptoms with the nature of disease, and how debased the average position of psychiatry is to-day can be estimated by the fact that the prevailing theory of insanity, whose merit consists of an easy nomenclature, now enjoys general recognition and

could be regarded, by a thinker like Meynert, *e. g.*, as an advancement.

Under these circumstances the teacher of psychiatry is apt to tarry too long with the symptomatology, if the standard of another discipline will be applied. But his task will be clearly defined, he will proceed as in the other disciplines of medicine and must deduct the symptomatology from the known attributes of the organ, of whose disease it is a question, *i.e.*, in our case from the attributes of the brain. Only in this way is the prospect offered us of gaining a natural, *i.e.*, based on its nature, and likewise exhaustive classification and comprehension of the symptoms.

The hypothesis that mental diseases are brain diseases, is now disputed by no one.* If we accept this, we must soon add: diseases of the brain of a special kind and special location; for they are in no way identical with the so-called organic brain diseases, which are far better known to us. If we bear in mind the classification of brain diseases into focal and general, mental diseases certainly cannot be included among the first, but perhaps among the latter. There are two general diseases which are included among the organic brain diseases: meningitis and progressive paresis. Nothing would hinder us from adding to them the mental diseases as a third category. But now the question arises: what are the fundamental signs by which this third category is differentiated from the other two so-called organic?

To get more into this question, we must occupy ourselves a moment with the symptomatology of brain diseases. All symptoms of brain disease are, as you know, either focal or general. The two general diseases of the brain designated, which belong to the organic brain diseases, are examples of those with prominent general symptoms in the clinical picture. But on the other hand they are characterized by the fact that focal symptoms also occur in them, indeed, it may be said they are never entirely absent; whereas mental diseases do not present these focal symptoms, consequently mental diseases represent general diseases of the brain

*Only a difference of opinion prevails as to how far they are of a functional nature or due to palpable changes.

of a special kind, as they are never accompanied by focal symptoms.

The importance, which the focal symptoms attain according to this definition in our subject, makes it seem advisable to keep their nature fully in mind. Through Meynert we have learned that the voluntary muscles and sense organs are connected with the cortex of the cerebrum by conduction paths, which extend in physiological continuity through the brain, spinal cord and peripheral nervous system. The sum of these paths, in which the law of isolated conduction prevails, he calls the projection system, and thus clearly and unmistakably expresses the fact of physiological continuity in contradistinction to anatomical continuity—a fact which by recent research is proven to be perfectly true. Corresponding to the division of the cerebrum into two hemispheres, the projection system is also divided into two halves, as is known, with the arrangement that motion and sensation of each half of the body is associated with the opposite cerebral hemisphere.* The expression "projection" is evidently borrowed from optics; as here the course of the rays through a system of lenses is to be followed exactly, so, in spite of all interpolation of ganglion elements in the paths of the projection system, the physiological continuity and isolated conduction are universally preserved. The majority of the focal symptoms may be readily traced to local interruption or stimulation of the conduction paths in the projection system.

A second series of focal symptoms may be traced to the fact that the terminal, respectively stations of origin, of the paths contained in the projection system are located in different parts of the cerebral cortex. The law of isolated conduction prevailing in them is thus extended to their anastomoses in definite cortical areas of the cerebrum. Such terminal stations of the projection system,—we will call them *projection fields*—are for example known for the optical tract in the occipital lobes, for the acoustic in the temporal lobes, for motion and sensation of the leg, arm, facio-lingual region in the so-called upper, middle and lower thirds of the two central convolutions, for the motor speech tract in

*On the whole that applies at least.

Broca's convolution. Of course this does not imply that the mode of projection within this region causes nearly the same arrangement as is found in the fibres of a peripheral nerve. On the contrary we know that in the projection fields of the cortex, nerves lying far apart in the periphery unite in a common junction and cite, as the best known example, the projection field of speech in Broca's convolution. As we will see later, the matter of function must therefore be decisive as to the manner of their projection in the brain cortex, because only the functioning nervous system is connected with the cortex. Here is involved a second attribute of the projection fields: the projection fields of the cortex are likewise the places where the memorial images of the various functions of the nervous system are located. The localization of memorial images then follows the same principle, so that the occipital lobes are the places of the optic, the temporal lobes those of the acoustic memorial images, the so-called middle third of the central convolution—the arm region—likewise contains the memorial images of the tactile impressions gotten by the hand. The fading of these definite categories of memorial images belongs to the focal symptoms of brain disease.

Therefore the focal symptoms prove to be characteristic throughout by the fact that they show the disordered function of the projection system, be it in its paths, be it in the projection fields of the cortex. Then the focal symptoms of the brain are all to be traced to functional disorders of the projection system, and its terminals in the different projection fields of the cerebral cortex, so mental diseases are distinguished from the two other so-called general organic diseases of the brain by the fact that the projection system and the projection fields are not thus affected sympathetically.

We are not as yet fully informed as to the extension of the projection fields in the cortex and their exact location. But it could be readily conceived that the advancement of our knowledge in this matter will show, that the entire cortex of the cerebrum is occupied by these projection fields. In our search for a locality, which is the site of the disease,

have we not then made an end to the brain and resorted to transcendentalism? Well, this is not the case, there is rather at our command, besides the projection fields, an anatomical basis of large extent, which we may claim, with good right, to be the site of mental diseases, namely the system of association fibres serving for the union of the projection fields. If this is so, mental disorders then are the special diseases of this organ of association.

We are forced to assume the destruction of these association paths in certain focal diseases of the brain; they form, in fact, the natural transition to mental diseases. A case of the sort occurs in certain rare examples of so-called transcortical aphasia.

For ages the hope has existed that in aphasia the starting-point would be found, which would pave the way to the comprehension of mental diseases. That this hope has not deceived us, that there are true cases of aphasia, which are the most intimately connected with known mental diseases, the patient, whose condition will now engage our attention, may prove to you.

This patient* now presents very plainly the traces of a severe mental disorder, which he had from 1885 to 1889. He stands and walks in a definitely fixed posture, but which has not hindered him from working at his trade as a cabinet-maker and comfortably supporting himself and his family. All the questions we ask him remain unanswered, or answered only by gestures. In fact he is entirely speechless and for five years has not been able to utter a sound. Still he understands nearly all that I say to him, as you can plainly see by his gestures and the execution of requests made of him. Still if I ask him certain other questions or make certain other remarks, he plainly shows that he does not understand them. Consequently he does not possess perfect comprehension of language, but only to a certain extent—always the same,—while he has entirely lost the motor function of speech.

This state of complete motor and partial sensory aphasia has developed from a definite mental disease, which for the

**Verhandlungen des Congresses für Innere Medizin. Wiesbaden 1890, p. 272.*

present I will call a motor psychosis and has then continued as a permanent defect. In the course of this disease mutism and verbigeration occurred temporarily, two psychotic symptoms, which also affect the domain of speech.*

If we try to get a better comprehension of this connection, we must keep in mind the different forms of aphasia, which are established by clinical observation. For this purpose follow me for a moment to the neighboring province of the so-called organic brain diseases.

Two projection fields of speech are known, a motor and a sensory. The motor (*m*) is the place of origin of the motor speech path (*mp*), a part of the projection system, which leads to the nerve nuclei of the medulla oblongata participating in speech. It is also the seat of memorial images of movements occurring in the act of speaking or motor speech ideas. The sensory speech field (*s*) contains the central termination of the sensory speech path (*sp*) and also of the acoustic nerves, but it is likewise the site of the memorial images of speech clang or, as they are called by Helmholtz, the clang images of the words. The clinical picture of motor or sensory aphasia occurs accordingly as the motor or sensory projection field is destroyed.

But we will now waive consideration of our patient for a moment, who is in fact an anomaly, for the insane are not aphasic as a rule. The sensory speech path and the sensory speech field are usually intact in the insane, they can understand all that is said to them. They are also in full possession of their motor speech function, in so far as it depends on the integrity of the motor speech path and the motor projection field. Nevertheless we find the striking phenomenon, that the answers of the insane are often irrational and irrelevant, or seem to have no relation to the question asked. How is this phenomenon to be explained, must we still hold to the presumption that the correct answer is the expression of normal brain function? Here there is only the one explanation, that the function of those nerve paths, which pass between the two projection fields,

*The temporary speechlessness of the insane we call mutism; verbigeration the monotonous, usually rhythmical repetition of one or some few words.

must be disordered. Hence insanity appears to us to be a disease of the association organ. But remember that in the current scheme of aphasia, those association paths are made use of, in that the sensory speech path *sp* and likewise the motor *mp* are regarded as continued through the cortical regions (projection fields), *s* and *m* to a supposed concept centre *C*. The transcortical paths *sC* and *Cm* are simply association paths, and in their province the functional disorder must be located, which is manifested in the improper answers of the insane. But every mental disease, in so far as it is manifested in the patient's perverse assertions, is for us an example of transcortical aphasia. The curious case of aphasia, in consequence of a mental disease, from which I started, suggests the assumption that under certain conditions all the parts *Cm* and a great part of the paths *sC* may be interrupted in the course of the disease. Then a real aphasia, of the same sort as in our patient, will probably occur.

The assertion of a concept centre *C* in the scheme of aphasia has often been misunderstood. But that it was not to be avoided and therefore requisite is shown by the following consideration. Sensory aphasia from destruction of the projection field *s*—cortical sensory aphasia, as I have called it, is characterized by the patients losing the memorial images of the speech clang and consequently the words are not recognized when heard again. But for the comprehension of language evidently more is demanded than for the recognition of the word clang: the proper sense must be united with it. If we maintain the antithesis of word and concept, we can only mean that some of these paths pass through the cortical centre *s* to other cortical regions, which represent the related concept. In reality this supposed concept centre is distributed to places in the cortex widely separated. But it shows the necessity of differentiating two entirely different processes with respect to the comprehension of language. The one, the recognition of the word clang images, depends on the retained function of the projection field *s*, which we will call *primary identification*. The other process, the rise of the concept joined to the

word, depends on the function of association paths with this supposed concept centre. We call it *secondary identification*. If we compare the whole process with that of sending a despatch, as others have done, then *s* is the station where the telegram is received, but the real recipient is represented by *C*. The relation of *C* to the motor projection field of speech in *m* is very similar: here *C* is the real sender, but *m* the telegraph station from which the despatch is sent. In other words: the sense, the concept of the word rises, and it needs to be conducted by anatomical paths to the motor projection field of speech *m*, for the word to be spoken.

If we call the mutual relations of *C* to *m* secondary identification, as we have a right to do in reasoning from analogy, so as the result of our consideration, the proposition follows: The peculiar utterances of the insane are signs of disordered secondary identification.

Progressive paresis must be assigned a very exceptional position among mental diseases; it can, as has happened, as well be included among the organic brain diseases. But still without doubt it is a mental disease. In the very frequent cases where it presents marked focal symptoms, foci are actually demonstrable, in which the otherwise diffuse disease process affects the projection system and the projection fields. But exceptionally there are cases of progressive paresis, where such focal symptoms are only intimated, for these then show the paramount transcortical character of the disease.

The comparison of aphasia with the speech symptoms of the insane has taught us that a disorder of secondary identification may be the common basis of mental disease and certain cases of aphasia. The harmony of the two diseases is explained by their like location in transcortical or association paths. We will discover their difference in that the mental disease affects, with individual choice, these paths separately, whereas the focal disease destroys compact masses. Exceptionally the general result of individually diseased paths is the same as that of a focal disease, and then a transcortical aphasia may follow a mental disease.

Thus from the special location we postulate a special

kind of disease: this is characterized by the fact that it differentiates, in a certain measure similarly to degenerative neuritis, the individuals among the association elements, and, as we presume for the present, according to the analogy to degenerative neuritis, according to the form of the different function.

II.

CONCEPT CENTRE TO BE REPLACED BY SOME LOCALIZED IDEAS. INITIAL IDEA AND TERMINAL IDEA IN THE SPEECH SCHEME. GENERALIZATION OF THE SPEECH SCHEME. KINDS OF MOVEMENTS: EXPRESSIVE, RELATIVE, INITIATIVE. DISORDERS OF SECONDARY IDENTIFICATION ARE PSYCHOSENSORY, PSYCHOMOTOR OR INTRAPSYCHICAL.

Our previous speculation has demonstrated to you the contrast which exists between brain diseases and mental diseases, as soon as we observe the province of speech. In fact the pathology of speech forms one of the most familiar chapters in the province of brain diseases. The utterances of the insane again comprise such a large part of the symptomatology of insanity, that from this alone the right can be deduced to consider the insane at present from this single point of view. I hope that your understanding will be facilitated for the following exhaustive discussion by the fact that we hold to the simplified conditions of our example.

We have to occupy ourselves still further with the (voluntary) fiction of a concept centre *C*. The advancement, which our clinical knowledge has gained from aphasia, shows most plainly that this present assertion was indispensable for the extension of our knowledge. To trace it to its true value I have only hinted at heretofore. Permit me to carry this suggestion somewhat further.

As I have said above in speaking of the central projection fields, we can consider it an assured fact that memorial images and ideas* are localized, *i.e.*, joined according to the content to different anatomical regions of the cerebral cortex. This localization could be disregarded in the scheme of

*See below for the different use of these two terms.

aphasia, and with some propriety the standpoint could be taken, that the receiver and sender of any dispatch in the imaginary concept centre *C* would be identical with all the rest of the brain cortex and, as we must again say, the association system belonging thereto, so that the two projection fields *s* and *m* are brought into an artificial opposition to all the other projection fields. On this oppositional position depends then the differentiation of the terms cortical, which relates to the two projection fields *s* and *m*, and subcortical or transcortical, according as it is a matter of paths, which lay on this or that side of these definite projection fields. By this view the anatomical idea was implicitly given that the sum of the transcortical paths *sC* and *mC* could form a compound column, accessible to destruction by focal diseases, in the immediate vicinity of the two projection fields *s* and *m*, while they must be regarded as radiating to the most diverse regions of the cortex. The clinical picture of transcortical motor and sensory aphasia seems to have been due to the rare accident that disease foci exactly invade the postulated site. That these rare cases are included among the focal diseases of the brain, will be entirely comprehensible. On the other hand the observation of a patient, whom I have presented to you, proves that such disease types can occur in the course of a typical mental disease, and so form a natural transition to mental diseases.

It is essential to our purpose to really refrain from such rare occurrences. But if we stick to the chosen example and hold only to the principle of localized ideas, so we appropriately divide the centre *C* into two localized ideas joined by an association path, which we will term *A* and *Z*. *A*, the *initial idea* is united by an association path *sA* with the sensory speech field. *Z*, the *terminal idea*, is united by a similar path *Zm* with the motor projection field of speech. *AZ* is the association path. The scheme thus changed corresponds somewhat to the process occurring when an arithmetical problem is given the patient. Its comprehension occurs in the initial idea *A*, its solution corresponds to the terminal idea *Z*, and when this is spoken, the

innervation from *m* occurs. Between problem and solution complicated trains of thought may occur, thus showing that the association path *AZ* may be conceived as divided many times. No special proof is needed that normally the whole process conforms to law, in a certain measure by previously formed paths, so that the result can be foretold. We can for the present assume that it is just the same with any question: the comprehension of the question is represented by *A*, the sense of the answer by *Z*, and the path inserted between embodies the fact that the answer arises from a more or less simple reflection. If we do not suppose the intention of being led astray, so must we recognize in this case in normal persons, the answers will occur in a very definite sense, which accordingly may be known before with approximate accuracy. The conformity to law, which may be here observed, depends, as we shall see later, on the principle of the beaten paths.

The previously maintained example admits of an extension, by which it may become the foundation of the whole symptomatology of mental diseases. We have only to replace the projection fields of speech by any other projection field. In the place of speech utterances any motor manifestation then occurs, and *m* represents this projection field, accordingly as the movement occurs in the arm, leg, back regions, etc. The central projection field of a sensation replaces the sensory speech field. In fact it occurs the same in seeing as in the comprehension of the spoken speech clang. Here also the primary identification takes place in the central projection field of the optic nerve, but for the comprehension of whatever is seen the conduction to other projection fields, secondary identification, is essential. Without this secondary process the sight impression is lost to the one receiving it and remains unintelligible, like the impressions of hearing in transcortical aphasia. And this is true, as slight reflection shows, of all sense impressions.

That this generalization of our scheme is permitted, even demanded, a closer inspection of our original example teaches. The answer, which I expect from the patient, does not need to be spoken; it may be written or com-

municated by silent pantomime and gestures, or in the performance of any chosen command. According to the muscles engaged in its execution, the projection field *m* will have a different significance and correspond to different places in the cortex. On the other hand my question, respectively my command, can be given without a spoken word, either by writing, pantomime, expressive movements of the hand or the like.

A short time ago I said that our scheme with the proposed modifications can aid in the deduction of the symptomatology of insanity, in so far as it consists of the patients' movements. But then this limitation is only necessary when we exclude from the movements the speech utterances, pantomime, attitude and all those manifestations of the patient within the province of expression, as corresponds to ordinary parlance and the views of the laity. But in the last instance there are also movements which are utilized for judging of the inner processes of an insane person, and for scientific consideration it would be an error to neglect this condition. And the more you really see of the insane and become acquainted with their symptoms, the more you will be convinced that finally nothing else is to be found and observed but movements, and that the general pathology of the insane consists simply of the details of their motor condition; for as a matter of course the loss of movement may be just as characteristic as its occurrence.

We conclude from movements as to the processes occurring in the consciousness (in the organ of consciousness) of another. If these movements are those of speech, so this fact is much more tangible and evident than all the other movements. The symptomatology of the insane has then for its subject the movements, in so far as they seem to be the function of the organ of consciousness, in other words of the organ of association. We here find only the single reservation, which impairs the universality of the proposition. There are of course motions, which are independent of consciousness, like those of vegetative life, of the heart, respiration, the vascular walls, viscera; as well as

the majority of reflex movements. As we will see later, these movements may be affected sympathetically in the insane, but then do not form the real object of observation. We will further find that in rare cases the state of the temperature and in almost all cases that of the nutrition, as expressed by the body weight, is of great symptomatic significance. But the exceptions are thus exhausted, and we will see that they are all to be considered secondary and in their turn possess a conformable dependence on the motor manifestations of the patients.

We are then justified in disregarding the exceptions enumerated, and have merely to keep more closely in mind the movements as functions of the organ of consciousness. A classification according to practical points of view is essential. Therefore we distinguish expressive, reactive and initiative movements. As we will see, this classification has the advantage that it embraces the sum of all possible manifestations of motion, and therefore it is to be preferred to Meynert's classification into movements of defense and offense, however portentous and fruitful this has proven in other respects,* it is defective and needy of improvement, in that a sharp boundary line between the three kinds of movement is often impossible. It is in the nature of the affair that certain movements of the one province come under another, that, according to the observer's standpoint, it may be a matter of dispute into which province a certain movement is to be placed. However, for the present we hold to the classification, because it has stood the test in the clinic of mental diseases.

By expressive movements we understand especially all those by which the affects and emotional state of a person are manifested. The speech movements largely serve this purpose, but not exclusively, and as far as they serve, they are speech movements in the broadest sense, so that they include, *e.g.*, the plaintive tones and the groans of pain. Words, which especially serve this purpose, are, as you know, the majority of interjections. Laughing and crying are specific expressive movements, like general pantomime.

*See his *Sammlung populär-wissenschaftlicher Abhandlungen*.

But the expression of the face while at rest, depends on certain muscular actions, and also the attitude of the whole body, which may betray, as well as words or pantomime, the person's affective state and affective condition. The movements of the entire body, serving for the expression of joy, mirth, arrogance, egotism, scorn, anger, anguish, sorrow, trouble, despair, hope, hatred and love are sufficiently known and appropriate that it will be unnecessary to describe them here. Normally the person awake is always animated by an expression, therefore we have become acquainted with lack of expression as an important clinical phenomenon.

The reactive movements are those following actual external stimulation. A person's answers to questions, regardless of their content, are always to be regarded from this point of view of reactive movements. Also an answer, which does not consist of words, but of other expressive movements, when the person questioned, with a significant mien, places his finger to his lips, comes under the conception of reactive movements. The absence of an answer may often be regarded as a significant symptom. The reactive movements, which are of great significance in the clinic of mental diseases, are especially the patient's conduct during the physical examination, toward the little favors shown by the nurses, toward requests of any kind, on the approach and greeting of the physician, toward the entirely changed situation in the rooms of the asylum. Also those movements, which are necessary for the gratification of the bodily wants, although they are to be traced to internal stimuli, must be included among reactive movements. It might, however, be proper to add the last category of movements to the initiative, while again many of the former at the same time fall into the province of expressive movements. At any rate it is to be again stated, that the absence of reactive movements is just as characteristic and valuable as a symptom in the insane as their morbid modification.

By initiative movements we understand all those which arise spontaneously and are not due to an actual external stimulus. This negative definition includes a part of the

expressive movements, while another part belongs to the reactive. We will then always have to judge of the expressive movements, whether they belong to the initiative or the reactive. It might be asked, whether there are really initiative movements, *i.e.*, those, which occur without any external cause; for usually an external cause may be demonstrated for an apparently spontaneous action. But such causes often have only the significance of exciting causes and recede in their importance before the preponderating internal motive, so the assertion of initiative movements is justified. In general the initiative movements consist usually of a whole series of individual motor processes and then are to be called actions. The whole conduct, behavior, actions of a person in a certain situation, all his movements, so far as they are not expressive and reactive movements, belong to the initiative.

The nerve excitation, which takes place over the path *sAZm*, may be compared to a reflex process and this path called a "psychical reflex arc." The movement innervated from *m* then appears as the result, as the tangible consequence of this process of excitation. The clinical method of psychiatry consists in studying the final result, in drawing a conclusion from the process as to how it occurred.

As you will likewise notice, it is really the reactive movement alone, which may be compared in this way to the reflex process. If the reactive movement may now consist, as in the example we started with, of a spoken word or any other movement, it may always be very readily considered a consequence of an external stimulation, an external impulsion depending on processes of motion. How is it then with the other kinds of motion, the expressive and initiative? Evidently these also permit of the same consideration; for with the exception, that in initiative movements it seems questionable, whether they occur entirely without external cause, we will be justified in replacing the external stimulation by the memorial images of past stimulation and in every case, where the present external stimulus is wanting, to consider those memorial images as initial members of the movement occurring in the psychical reflex

arc. We may even go so far as to use the existing movement as a proof of this assumption. For as it is not conceivable without a cause, while an apparent cause is wanting for the movement, the actually existing movement can only be due to a force treasured up somewhere. But these supplies of reserve force are memorial images, as we shall see later.

After these preliminary remarks we are now able to familiarize ourselves with the morbid derangements of movement, which are observed in the insane. They all depend on disorders of secondary identification, as I have above shown. But still I must remind you, that we have considered as secondary identification, not only the relation of *s* to *A*, *i.e.*, of the nearest sensory projection field to the initial idea, but also the process of excitation proven in the inverse direction of conduction from the terminal idea *Z* to the motor projection field *m*. We were justified in this, because the path *Zm* is an association path, as well as the other *sA*, and in these association paths the physical process occurring in them must always be identical, in whichever direction it occurs. For the same reasons we can also infer the relation of *A* to *Z* to secondary identification.

As it is always a matter of nerve paths, so a morbid change of excitability, respectively capacity for conduction, is always to be based on the disorder of secondary identification, and all possibilities are exhausted, if we keep in mind the three cases of lowered excitability, respectively capacity for conduction, increased excitability and perverse excitability. We will call the path *sA* psychosensory, the path *Zm* psychomotor, the path *ZA* intrapsychical. The possible cases are then contained in the following summary:

<i>Psychosensory</i>	<i>Psychomotor</i>	<i>Intrapsychical</i>
Anæsthesia	Akinesis	Afunction
Hyperæsthesia	Hyperkinesis	Hyperfunction
Paræsthesia	Parakinesis	Parafunction

The objection may be raised against this, that there are always disorders of motion, which oppose us in the insane, as I have stated, and that therefore the whole symptom-

tology is exhausted in the three cases of hyperkinesis, akinesis and parakinesis. This objection is justified in a certain sense, and needs an exhaustive discussion. It is the easiest to refer it to the example of conversation, with which we started. If the patient is silent when he should speak, we will be able to consider this symptom a circumscribed form of akinesis limited to the province of speech. If he presents the symptom of loquacity, it is likewise a circumscribed form of hyperkinesis. Whereas, if his answer is nonsensical in its purport, so one will be justified in ascribing this to parakinesis, but still a closer inspection would always be necessary, because then a certain misconception is to be expected and presumed. For practical reasons we will always be obliged to differentiate two entirely different things in the act of speech, namely the motor act as such and the purport of the words spoken. But as there are now really morbid modifications of the act, or as we may term it, of the formal part of speech, so it would be the more correct to employ the word parakinesis in this restricted sense. We have an example in the symptom of imperative speaking and the monotonous repetition of the so-called verbigerator. The same consideration, that the content must be differentiated from the formal part of movement, applies to all the expressive, as well as to the reactive and initiative. As it is possible for a patient to utter the veriest nonsense in formal words perfectly correct, so the expressed affective condition in language perfectly correct can of itself be of a morbid nature, as well as his acts formally correct, but false in content. In all these cases then we will not assume a disorder of the psychomotor identification, but be constrained to seek the derangement in more remote parts of the psychical reflex arc. This corresponds to common parlance and the usual view, in that the means the patient uses to communicate his feelings, express affects, etc., are generally overlooked completely as self-evident affairs. After this discussion you will comprehend that in the insane, we often find symptoms of disordered identification, when the motor mechanism itself is perfectly intact.

III.

NATURE OF MEMORIAL IMAGES. AFTER-IMAGES OF THE RETINA AND OPTICAL MEMORIAL IMAGES. THE ASSUMPTION OF SPECIAL PERCEPTION AND MEMORY CELLS DO NOT SUFFICE FOR EXPLANATION. LOCAL SIGNS OF THE RETINA. IDEAS OF SIGHT.

Ere I can introduce you further into the symptomatology of mental diseases, I must again return to the concept centre, so often mentioned, or rather, as you can apprehend more correctly, to the localized memorial images. You have become convinced, I hope, in the course of the discussion, that the presumed concept centre, as well as the concepts themselves, is incapable of localization in a certain sense.

In the introduction to my first lecture I have asserted as a fact, confirmed by the experiences of pathology, that the central projection fields are localized in different territories of the cerebral cortex. We must likewise ascribe to them the attribute of being places of memorial images, whence then a definite localization of the memorial images was to follow. We will have to make ourselves better acquainted with the nature of these memorial images.

I might very briefly cite the clinical facts, which, in my opinion, completely prove the principle of localized memorial images: they are the clinical experiences of sensory and motor aphasia and the cases of so-called tactile paralysis of the hand. The first are now so well known that I need not go into them, but the latter must be especially considered as to their significance. Here are two series of facts, which by their relation to each other, furnish the evidence. Cases of circumscribed cortical injury in the region of the so-called middle third of the two central convolutions, which leaves as a permanent defect the inability of the hand to recognize objects by touch, while real so-called sensory disorders are demonstrable only to a slight degree. Conversely, cases of spinal or peripheral disease are observed, which are accompanied by the gravest disorders of sensation, and, as I have especially shown, also of the so-called muscle sense or sense of position, and yet present only

insignificant disorders of the tactile function. The last cited cases in a certain measure prove that even a very defective and faulty projection system conducts reports to the brain, which suffice for primary identification, if only the central projection fields and hence memorial images, tactile images, as we may call them in the preceding case, are retained. But the cases of the first kind can only depend on loss of the primary identification, if disorders of the projection paths are so slightly demonstrable. The principle of memorial images localized according to the projection fields is placed beyond doubt by such facts, and hence its application to all projection fields is warranted.

If we return to our example of the organ of speech, we find the process of *recognition*—primary identification—joined to the hypothesis, that a fixed possession of memorial images is present. So the question arises: How is such a possession brought? Evidently it is a matter of a very special attribute of the nervous system, that it undergoes permanent changes by temporary stimulation, an attribute which we call *memory*. The memory of the nervous system is manifested, e.g., in that the faradic excitability of a nerve can be increased by frequent faradisation*. The same stimulus later acts more readily, when it has often occurred previously, so that then a permanent change has taken place in the nerve, in consequence of temporary stimulation. All dexterity depends on this principle, all accomplishments. Paths, which were only passable with difficulty, become readily passable by repeated use, they become hollowed out, so to speak. Now, if such a memory is perceptible in the nerve fibres, it is very especially attained in the nerve cells or ganglion bodies. A reflex in the spinal cord, which is effected by these ganglion cells, occurs the more readily, as the more often it has previously taken place, and that it is here a matter of a special attribute of the ganglion cells, has been proven by the researches of Ward,† Jarisch and Schiff‡ and others. The after-images of the retina have

*Mann, Deutsches Archiv für klinische Medicin. 1893.

†Ueber die Auslösung von Reflexbewegungen durch eine Summe schwacher Reize. Du Bois-Reymond's Archiv. 1880.

‡Untersuchungen über das Kniephänomen. Wiener med. Jahrbücher, 1882.

with good right been referred to the ganglion cells. In the brain cortex it is in the ganglion cells, to which must be especially ascribed the attribute of being permanently changed by momentary stimulation, that residues of it remain, which we call memorial images.

After what has been said it seems self-evident that the possession of memorial images or *content of consciousness*, as we will call it, is directly dependent on the condition of the projection system and the sense organ, by means of which it has been acquired. The consciousness of a weak-sighted person, or one with generally poor senses, is therefore different from that of an individual with normal senses. The person born blind will not be in possession of optical memorial images and therefore, in case he can be operated upon, will represent a state, which is also known to us from its pathological occurrence as the so-called mental blindness. Like the person born blind, the one born deaf has a content of consciousness, which is defective in a whole category of memorial images derived through the sense of hearing. In partial brain defects, as they have occasionally been observed in imbeciles from birth, who likewise have a sense defect, *e.g.*, are deaf, the same absence of memorial images is seen as a consequence of the defective formation of the central projection fields. No less instructive in this respect is the comparison of the animal brain: As is well-known, man has only stunted olfactory lobes, while many families of mammals possess those constituting a considerable portion of their cerebrum, have a special ventricle and are covered with several superficial convolutions. How the consciousness of such an animal, *e. g.*, the dog, differs from ours, daily observation teaches. It is filled with olfactory memorial images, in which the animal, sniffing about, manifests all the signs of a pleasant affective condition, like the epicure at the table, or the artistic eye at the sight of beautiful forms. The content of consciousness in this way shows its dependence on the condition of the projection system and the central projection fields, a condition, which permits the statement: Consciousness is a function of the central projection fields. If the assumption is confirmed,

then the further proposition is allowable: Consciousness is a function of the cortex of the brain mantle.

If we now seek to further understand what we have to conceive by a memorial image, we will do well to keep in mind a definite example, like the optical memorial image. For this the comparison with the after-images of the retina is especially apt, which belong to the same sense province. How far is the comparison pertinent and warranted? As we have above seen, it is the ganglion cells especially, in which we trace the after-images of the retina to excitement out-lasting the stimulus; by a definite arrangement of these stimulated cell elements an image arises, which we are able to project into a definite space. This image is of a very limited duration in point of time. There is nothing to prevent the assumption of such cell elements in the central projection field of the optic nerve, we call them perception cells, in which the projection fibres first terminate. Would the assumption that the memorial image consists of the re-echoed excitement of the perceiving elements sufficiently explain the evident difference existing from the after-images of the retina? Much speaks against it. According to my experience at least, the attribute of spatial projection is completely absent in optical memorial images. They seem to me projectable into space only so far as they take a definite position to the person. Besides they appear to be of unlimited duration. The last distinction is especially important. It may be hard to conceive, that the same perceiving element, which has once been used, should retain its permanent state of excitement, nevertheless it can soon after be engaged in a new perception from an entirely different stimulus. It would really be expected that it behaves similarly as with after-images, and that at least the subsequent process of excitement always obliterates the preceding. We assume, *e. g.*, it is a matter of the optical memorial image of a letter or a number. It can be accepted that for the origin of these memorial images, such retinal images, will essentially prevail, as occur at the place of the keenest vision, or very near it. Here only are the greatest number of sensory elements united, but the optical apparatus is

also very accurately adjusted for the images of this region, so that the sharpest images can occur here. Accordingly Nature has so arranged it, that for visual impressions, which excite our attention, the place of keenest vision is adjusted wholly involuntarily by proper eye movements, an impulse, which in the adult renders it very difficult to completely control his eye movements. Consequently many of the same retinal elements, which previously represented the image of the letter, will soon be demanded for the production of a new image, e.g., the number, therefore the cells of the central projection field serving for perception. The assumption is wholly permissible and even probable, that the place of keenest vision in the retina may occupy relatively a very considerable space in the central projection field. The difficulty of explaining, under these circumstances, the memorial image by a special memory of the cells, is therefore unchanged. It has been attempted to overcome it by differentiating perceiving and remembering ganglion elements and ascribe to the latter this special attribute of memory. Only the elements serving perception should represent a cortical projection corresponding to the points of the retina. However it seems to us the difficulty is not overcome by this assumption alone. The distinction between perception image and memorial image does not depend so much on a difference in the active elements, rather in that the common arrangement of the retinal elements concerned, or the *form of retinal excitement* is different in the different images, while the same retinal elements may have predominantly cooperated in their origin. But the memory of the like mutual arrangement of the functioning elements or, in other words, the form of excitement, completes the psychological concept of the memorial image. I fully concur with Sachs* and Goldscheider,† that the assumption of an acquired functional union of simultaneously excited perceiving elements by means of existing association paths is able to explain this special memory of the form of the retinal image, of

*Vorträge über Bau und Thätigkeit des Grosshirns. Breslau 1893.

†Ueber centrale Sprach-Schreib-und Lesestörungen. Berlin. Klinische Wochenschrift No. 4. 1892.

the common arrangement of the stimulated points in the retina. When the same order of stimulation occurs and the retinal image is again recognized, the process may be conceived, as Ziehen* has done, that from the perceiving elements the memorial image is excited, because only the cell combination concerned is in a certain measure sensitive to this form of excitement (somewhat as sound-resonants respond only to definite combinations of tones). But this shrewd conception also depends on a comparison and does not relieve us of the necessity of explaining the fact of this "sensitiveness," and so we need the combination of perceiving elements by fibres or the process of association. We will see later, that an association of different sense impressions always occurs, when they have taken place simultaneously; just as we can here assume that the simultaneously excited perception cells serving perception are associated with each other and, because on renewal of the same sense impression, the like form of arrangement is always renewed, also remain associated. The memorial image then would be simply an acquired association of perceiving elements of the central projection field.

You see that in this conception the assumption of special memory cells is indispensable. In fact there are entirely different reasons, which have a bearing on this. I will only say here, that it would not be very comprehensible why the sensory activity leaves the memorial images, if the perceiving elements alone could be implicated and definite retinal points always corresponded to them. Also that the memorial images are not projected into space, like the after-images, then remains incomprehensible. Finally the structure of the central projection fields in the cortex cannot be considered a contrary reason. A simple layer of ganglion cells, which are all connected by projection fibres, would satisfy the previous assumption. But in the cortex we everywhere meet with such a number of superimposed ganglion cells, and more so still in the optical projection field of the occipital cortex, that they by far exceed the number of projection fibres. All these considerations we will

*Leitfaden der physiologischen Psychologie. Jena. 1891.

have to make use of in the future. In the meantime we claim that we are finally able to trace to an anatomical distinction the demonstrable differentiation between memorial images and the after-images of the retina, namely, the durability of the first, the instability of the latter: *the cortex has association fibres, the retina has not.*

If the stability of the memorial images can be explained by the repetition of the same order of stimulation and this proposition can be applied to the special case of optical memorial images, we soon meet with certain difficulties. The retinal images, which are produced from concrete things of the world, are first large, then small, accordingly as these are near or far, but we must consider their memorial images as units. The mutual arrangement of the retinal points remains the same, and the images will be regarded as perfectly congruent, so that still corresponds to the psychological requirement, which we must place on the memorial image. But there are always different retinal points, whose arrangement in one and the same memorial image must be represented, and even in the simplest assumption, that the object is fixed, numberless images of different sizes, if also congruent, would always appertain to a memorial image. This difficulty is gotten over, if the intelligent hypothesis of H. Sachs is accepted. According to it the so-called local signs of the retina are determined by two factors, namely, the meridian in which they lie, and their distance from the central point. For each half meridian of the retina a special muscle arrangement is required, by whose cooperation the eye ball is turned so that the source of light falls on the macula. This muscle combination is the same for all points of the same half meridian, only the amount of innervation varies and increases with the removal of the retinal point from the fovea centralis. Whereas for the different half meridians the muscular arrangement is always different. The varying size of images of fixed objects then depends alone on the sensation of innervation of varying intensity, while the anatomical factor, the combination of different muscle effects, remains the same. In other words, this retention may be expressed as follows,

and transferred to the relations of the cortex. The perception cells of the central projection field associated with the retinal points of any half meridian have collectively the same associative connection with a definite point of the central projection field of the eye movements. We must consider the latter divided into as many different muscle combinations ("ideas of eye movements"), as there are half meridians in the retina. That is, of course, to be understood *cum grano salis*, as it is a matter of continuously graded series of muscle representation, not of special points. If this view will be taken into account, the optical memorial image is characterized, besides the attribute we have become acquainted with, in that the perception cells constituting it are associated with definitely localized ideas of motion of the central projection field of the eye movements. By repetition of the same visual perception, besides the association of the perception cells with each other, one between the corresponding, also localized ideas of movement, occurs. We will call the thus broadened concept of the optical memorial image visual idea. We now see that in spite of changed size of the image, the last named components of the visual idea remain the same, when they refer to the same object. That the same considerations apply to the retinal images, whose position is asymmetrical to the central point of the retina, you can see from Sachs' book, whose perusal I cannot too urgently recommend to you for the introduction to our subject.

A second difficulty, which is not to be misconstrued, consists in the different initial position of the object, of which distinct images are produced. An equilateral triangle, a cross are again recognized, whether the triangle now stands on its base or apex, the cross is upright, oblique or lies down. How can the same memorial image occur? To this is to be replied: by far the largest number of objects of the world and in consequence of this their retinal images, do not present this difficulty, for they have a fixed position with respect to our eyes. In comparison to these are the objects movable and changing their position, respectively retinal images on the one hand in the minority, on the

other they usually have a definite, habitual position with respect to our person. If we still take into account the ability of our eyes to so place themselves that a known image appears again, so the difficulty arising from the changing position of objects will be but slight. But it cannot be denied, that under certain circumstances the memorial images are not numerous enough to identify objects occurring in strange positions. We do not recognize inverted letters; several well-known optical illusions depend on the same defect, and how strange seems to us the image of a person walking about when seen through a convex lens, and is thus inverted!

Admitted, that by this consideration several difficulties are removed, still the great number of cell groups required to harbor the optical memorial images alone will seem enormous. Yet experience teaches that the healthy brain is still able to acquire new memorial images, then an abundance of elements serving this purpose must always be present. I will soon call attention to a miscalculation, which perhaps may make this difficulty appear exaggerated: as I will show later, we are inclined to overestimate the number and variability of concrete things of the world; in like degree we consequently underestimate the frequency of the recurrence of the same impressions.

IV.

THE CONCRETE CONCEPT AN ASSOCIATION OF MEMORIAL IMAGES. CONSCIOUSNESS OF THE WORLD. NUMBER OF CONCEPTS. NECESSITY OF CASUALITY.

As we have found that the optical memorial images are acquired associations of perceiving elements of the central projection field, and that the form of stimulation determines the kind of this association, we are justified in transferring all sense provinces to the central projection fields. The acquirement of memorial images depends very generally on the attribute of the central projection fields, that their perceiving elements, *i.e.*, those ganglion cells which are directly united with the projection fibres, are united with each other by association fibres, the special fibres of each projection

field. In the future we will speak of olfactory, acoustic, tactile and gustatory memorial images, without going further into their nature. But I must especially call your attention to the fact that each sense province offers special problems,* and that these simplest psychical elements, the memorial images, may be of a complicated sort. By virtue of this possession of memorial images recognition, primary identification, occurs. If we limit ourselves for the sake of simplicity to the concrete things, which alone form the material for sense perceptions, we thus gain a content of consciousness, which is the sum of the memorial images of concrete things. It is now readily conceivable that within this sum definitely fixed groupings are to be differentiated, which always correspond to the attributes of a definitely concrete thing. One and the same concrete thing generally gives rise to several sense perceptions always recurring in the same way. The coincidence of these different sense impressions causes their memorial images to be associated. In this way to every concrete thing an acquired association of memorial images of different senses corresponds, and this association is the more stable, as the more often the same concrete object comes within the scope of our senses. In this way we gain an anatomical basis for those psychological qualities, which are now called *concepts*. We are now able to differentiate the stability and extent of the concept, but in concrete things we can differentiate essential and non-essential attributes, accordingly as they are always inherent to the thing or changeable. The extent of the concept of course extends to the non-essential attributes, as they must always show a certain constancy dependent on the nature of the thing. Of each concept, as is readily conceived, a curve might be constructed, in which the extension ("extent of the concept") would be shown by the axis of the absciss, the intensity ("stability of the concept") by the height of the ordinate.

We must therein perceive the nature of secondary identification, as contrasted with the primary, that from each individual component of the concept the sum of all the

*See Ziehen.

others, i. e. the whole concept may be excited. The anatomical basis for the acquisition of these functionally homogeneous groups of cell elements is the presence of the association fibres between the different projection fields. We will call these transcortical association paths, as contrasted with the transcortical fibres of each projection field. The content of consciousness, which we have now become acquainted with, embraces then the concepts of concrete things, or, as we call them, the *concrete concepts*. The sum of these concepts we may distinguish as *consciousness of the world*, for in these concepts, in fact, we possess a true picture of the world.

As you will soon notice, in the consciousness of the world is contained the apparatus for simple processes of deduction, it is the same as also serves for secondary identification. From words I have heard, from the bark of a dog, from a definite odor, I deduce the presence of a person, a dog, a certain flower. Almost all deductive processes, which refer to the nature of concrete things, are of similar nature and then, as we have seen, only individual cases of secondary identification.

The content of our consciousness consists hence not only of memorial images, but second of very definite complexes of memorial images firmly united with each other by association, the concrete concepts. The number of concepts corresponds to the number of concrete objects. Perhaps it astonished you, when I said that only some few and always the same objects would come within the scope of our senses. Do not, you may ask, the things of the world in almost infinite number and indescribable variety come within the scope of our senses? Fortunately there is a very definite answer possible. The number of words gives us an idea of the number of concepts: of the number of these concepts, which a certain individual possesses, by the number of words he uses. One of the most comprehensive minds that ever lived or will live, is without doubt Shakespeare, his vocabulary was consequently unusually large: it amounted to fifteen thousand (1). How much we must deduct from that, when we will limit ourselves to the concrete things of

the world! Not everyone is a Shakespeare, but it will astonish you if we go to the other extreme (within the civilized nations!): the vocabulary of an English sailor is not over a few hundred. The number of concrete things is then not so large, their variety not so significant, as we are really inclined to estimate, especially when the number of ganglion cells in the brain cortex is stated, according to Meynert's calculation, a thousand millions. Still the same concrete object must proportionately come within the scope of our senses extremely often, for in this way a firm union of definite memorial images must arise of what we have called concepts, will now seem intelligible to us.

It now appears self-evident to you, that the consciousness of the world is definitely dependent on the world or is a function of it, as we may express it. Quantitatively, as the above examples show, this is beyond any doubt. Yet as contrasts we must not only keep in mind the extremes, like Shakespeare and the sailor, but principally the consciousness of the city resident, well educated and living in the complicated relations of civilization, and of the countryman, fisherman or hunter, growing up in solitude and education neglected. But also the qualitative difference of the consciousness of the world must also be astonishingly great. Think of the contrast between a tropical resident, living in the midst of a luxuriant flora and fauna, in a world of color, and the inhabitant of the polar region, who in a short Summer sees only the traces of vegetation.

It well pays to still tarry a moment with the noteworthy fact of association and keep its conditions in mind. The majority of associations, which could heretofore interest us, depend on the coincidence of the impressions. This of course does not imply an explanation, but the fact is undeniable, that the memorial images of coincident sense impressions are associated, whether its occurrence is due to an inner connection or the merest accident. Only accidental occurrences are not so readily repeated, therefore their association does not become so firm as those conforming to law.

(1) According to Meynert. *Sammlung von popular-wissenschaftl. Vorträgen*, 1895, p. 5.

The association of the different memorial images with each other is a second example of the appearance of the so-called beaten paths, i. e., the union between them therefore becomes so firm, because these paths have been so often used.

Besides association by coincidence, we know a second kind of association, that by sequence. I need only to refer to the fact, that in every attempt to learn a thing by heart, it plays the chief role. There are whole series of associations, which, early impressed upon us, remain in our possession for life; I refer to the alphabet, multiplication table, the Lord's Prayer, etc. This association by sequence alone gives us knowledge of things conforming to law. Whenever a definite sequence of phenomena recurs, we believe in a conformity to law, and very especially will we be strengthened in this belief, if we are able to voluntarily produce the first phenomenon, to then see the second phenomenon follow. That is the reason why experiment so irresistibly convinces us. But it is readily conceivable, that if an inner connection of the two phenomena is not thus disclosed, it will readily be proven by the presence of that association path, which has been used before in the same process. The necessity of causality, to speak briefly, is a congenital fault or merit of our brain. The phenomena of the world are far from possessing a connection with each other; the bond, that unites them, exists only in our brain and does not serve to unite the things themselves, but only the traces they leave in our brain.

We will see later, that a coincidence of sharp sense perceptions is impossible, owing to that attribute, which has been called narrowness or unity of consciousness. In reality only *one* sense perception occurs at a time, the second, apparently simultaneous, either follows or precedes it. Association by coincidence seems to be merely a case of ordinary association by sequence (1).

After having said so much of association, we cannot help seeing the difficulties which interfere with the comprehension of this process. On a former occasion (2) I compared it to the conduction of a wave through a system of

closed tubes. Meynert and Ziehen recently have made similar comparisons. At any rate the fact of association may be explained by the assumption of conducting paths between the anatomical localities where the memorial images of the several senses are localized. In the white matter of the brain mantle, as well as in the cortex itself, a multitude of fibres are demonstrable, which serve for the union of different cortical areas, so its anatomical basis is undoubtedly provided. When two cortical areas of one and the same central projection field are excited in the act of primary identification, or different projection fields simultaneously by means of the projection system conveying stimuli of the world in the act of secondary identification, the path of union extending between them is likewise put in vibration, the resistances, which oppose the conduction of the process of excitement become weaker and weaker, the oftener the process is repeated, and more the path is beaten, as I formerly termed it, facilitated, as it has been called of late. It is not implied by this, that this path must be continuous, we can only claim a physiological continuity for it, as for the paths of the projection system. On the contrary the fact very definitely indicates, that there is a special layer of ganglion cells of the cortex, that of the spindle cells, which by their form and position seem related to the association system, also that ganglion cells are interpolated in the association paths. In general it is contradictory to our view to assume nerve fibres, whose origin from a nerve cell cannot be proven. The simplest assumption then will be, that each spindle or association cell sends out two nerve fibre processes in opposite directions, which by their terminal branches are attached to the ganglion cells of the projection fields to be associated. There is no difficulty in fancying that the ganglion cells of a central projection field implicated in primary identification are all united by these association fibres provided with an association cell, although under these circumstances an immense number of association fibres are required, if computed from the number of perceiving ele-

(1) As to the further conditions of association see Ziehen.

(2) In my first work on aphasia.

ments to be combined. But as soon as the first physiological union, the memorial image, is disregarded, or only the next complicated case of visual ideas (see page 29), or the association between visual ideas and the memorial images of another projection field are kept in mind, the difficulty of fancying a definite material basis for the process increases immensely. Recently Goldscheider has correctly emphasized this circumstance. We will, however, consider the present possibilities. It seems wholly impossible to employ this scheme, which is conceivable within a projection field, namely that each perceiving element is anatomically united with every other by previously formed paths, for the union of memorial images with each other; as large as the number of fibres here at command may seem, it would be wholly insufficient in comparison to the almost infinite large number which must result from these combinations. Hence follows the absolute necessity of making another assumption, which simplifies the conditions of association. For the reasons above stated, but especially the last, I consider the idea justified, that the psychological unity of the memorial image corresponds to an anatomical unity. There could be e. g. cells of definite layers of the cortex, which received fibre processes from the above mentioned association cells, but also united with the perceiving or projection cells. There is nothing impossible in considering the processes of excitement of a definite cortical layer distributed to many elements, in a certain measure embracing the ganglion cells of the next cortical layer. Besides reflect, that for our consciousness it is the memorial images, not the perceptions, which remain associated, if the acquirement of association depends on the coincidence of the perceptions. Further reflect, how slowly and difficultly firm associations between different senses are acquired, but with what security they are retained, when once acquired. The opening of this road may be attended with very special difficulties.

(*To be Continued.*)

INSANITY DEFINED ON THE BASIS OF DISEASE.*

By C. H. HUGHES, M. D.,

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THE subject of the true nature and definition of insanity has always been one of profound interest to medical men, to philosophers, to medico-jurists, and to alienists especially. The student of psychiatry has not failed to observe a gradual evolution in the interpretation of that aggregate psychical phenomena which we have come to recognize as insanity, or as representing the aggregate insanities, for by custom we class all mental aberration under the one term, insanity. In the earlier ages insanity was observed and described purely in its psychical aspects. Its unfortunate victims were visited by the anger of the gods. Galen, in his definition of insanity, was one of the first, along with Hippocrates, to perceive that there is a physical as well as psychical perversion. He had a glimpse, like Moses on Mount Pisgah, of the promised land. He had a glimpse of the true condition of mental aberration when he described it as *delirio sine febre*. He knew there was delirium and he knew there was an absence of fever, and that is the best and most distinctive diagnostic sign we have to distinguish the ordinary forms of insanity from the delirium of fever. Of course, we have post-febrile and ante-febrile insanity.

*Presented to the American Medico-Psychological Association, May 10th to 13th, 1898. It was offered as a verbal communication, without notes, in lieu of the written paper we had partly prepared and failed to have with us. It is here reproduced from the proceedings without emendation except one verbal correction, viz: the word *brain* being substituted for the word *mind* in ninth word space, sixth line from close, the former being the correct word used by the author.

Connolly defined insanity upon the basis of its psychical symptomatology. Blackstone seems to have gotten a glimpse of the true nature of mental aberration in its somatic and psychical aspects when he defined insanity in this wise: "A lunatic *non compos* is one who hath had, but by disease or grief or other accident hath lost, the use of his reason." This view of mental aberration, the standard of comparison being the individual with his former self, seemed to have been lost sight of by the medical men of Blackstone's age and was not brought prominently before the alienistic mind until Andrew Combe introduced the standard of comparison of the individual with his former self and as a definition said that a man affected with insanity had undergone a change in his natural habits of thought, feeling or action. Connolly considered insanity purely in its psychical aspects and regarded the man insane when there was impairment of the reasoning or comparing faculties; a purely psychical definition, one which does not embrace all forms of insanity and which includes men whom we are accustomed to regard as sane. A man may not be perfect in his comparing faculties and still be sane. All men are not equally expert, or equally competent, or equally logical in the manner in which they use their reason or comparing faculties and the result of offering such a definition in court would be that the expert witness would be easily confounded and he might be confounded with the just statement that such a definition might include a large portion of mankind in general, especially those who do not agree with us in their views of certain subjects. It was left to Esquirol to detect the relation of somatic with psychical defect in mental aberration, when he described it as a *cerebral affection* characterized by disorder of the intelligence and the will. But then Esquirol made no provision for those forms of insanity with which we are now quite familiar and with which he, himself, was quite familiar, the impulsive forms showing homicidal impulses, sudden epileptic automatism and other states. Thus *mania transitoria*, which we know is so often associated with conditions of psychical epilepsy, is not well provided for in that definition. Our immortal colleague of

the past, Isaac Ray, whose delineations of mental aberration have never been surpassed by any writer, taking the definition of Connolly and Andrew Combe and coupling them with conditions of disease involving the brain, approached nearer the clearest conception of the subject of any writer of his day with whom I am familiar. When he said that insanity is due to disease of the brain producing a change in the natural habit of thought, feeling or action of the individual, he got upon ground that was to the physician logical standing ground, impregnable to any assault that might be made against the psychological expert in court, and it enabled physicians who stuck to it, to always sustain themselves with credit and their profession with honor. The only trouble with that definition was with the forms of mental aberration connected with inherent organic heredity, teratological defect, transmitted conditions of the brain, those conditions of insanity which had appeared in the individual and abided with him from early life as a congenital heritage of mental defect. We see in all these contributions to the subject of mental aberration what we see in every department of science and every department of human research; we see the natural evolution from the obscure to the more perfect light, from dim discernment to the clear light of the sun of scientific experience. We see that everywhere; in every condition that we attempt to interrogate. Combe characterized insanity as a prolonged departure, etc., without adequate external cause, from the natural habits of thought, feeling or action, but the departure from the natural may be exceedingly brief in some cases, as in imperative conceptions, the morbid impulsions of psychical epilepsy or mania transitoria."

Some insanities are just as precipitate and brief as the epileptic convulsion, the epileptic arterio-spasm which precedes them and which they supplement as in psychical epilepsy. But those who preceded us had not reached the clear conception which we now have of the inter-relation of the brain and mind. Maudsley, following Herbert Spencer, in his *Psychology of the Human Mind*, gave to medical men something tangible upon which to present the condition of

the aggregate phenomena which we call insanity. And now comes the neuron theory and its relationship to mental disease, and now do we certainly know that there can be no such thing as insanity without disease primarily or secondarily or coincidentally involving the brain. We stand upon clear ground with all the mists blown away by the researches of psychology, and psychiatric observation, and we ought to be absolutely impregnable before any court in making definitions of insanity. It is no longer necessary to define insanity as in Shakespeare's Pollonius, "To define true madness, what is't but to be nothing else but mad." We no longer have to beg the question. We understand that insanity stands on the same basis as all other diseases, plus another organ. Not exactly as the liver secretes bile in its physiological state, as the stomach secretes gastric juice, or as we would say now, as the peptogenic glands secrete gastric juice, does the brain secrete mind. We do not now express the formula in the exact phraseology of Cabanis, but we say, as the brain in good anatomical condition is necessary for the physiological expression of mind, so the mind when it expresses itself to the world in a pathological manner, obeys the laws of all other diseases. Its organ, the brain, is wrong either functionally or structurally, primarily or secondarily, either in the intimate structure of the neurons or in their relation to each other in the cerebral cortex, or by reason of their abnormal blood-supply or by reason of changed conditions of nutrition, of metabolism, or whatever it may be. Now, by the aid of modern research assisted by the microscope, the test-tube and the crucible, we do know that there can be no expression of mental derangement without there is a substratum of cortex disease, either in the neuron, in the enveloping membranes of the brain, in the nourishing blood supply, in the behavior of the vaso-motor mechanism, or remotely in some of the organs of the body affecting the brain so as to cause these conditions, and we need never be at sea before any court, before any jurist, in giving our views of insanity as *a disease primarily or secondarily involving the brain of the individual so as to produce in him a change in the natural habits of*

thought, feeling or action—a change of his normal, natural mental expression by which, and by reason of the disease underlying all, he is placed out of harmony with his surroundings, with his natural self or with his normal family type of mind.

DEGENERACY STIGMATA AS BASIS OF MORBID SUSPICION.*

A Study of Byron and Sir Walter Scott.

By JAS. G. KIERNAN, M. D., Chicago.

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THE youth and manhood of Byron were spent in circumstances of decided contrast with those of Scott. In the Glennie school of Dulwich the evil influence of a degenerate mother loomed up. Of course, as Jeafferson remarks, the disputes and conflicts that arose between Dr. Glennie and Mrs. Byron seemingly related to small matters, but the school life of a school, more especially of a preparatory school for quiet young gentlemen, is made up of seeming trifles. Complaining of the slowness of her boy's progress Mrs. Byron acted as though her chief object was to make the progress slower. Instead of leaving George to his studies she was constantly driving over to Dulwich to take him out for the afternoon, for the theatre or for a children's party. To Dr. Glennie's first mild protests against these interruptions of her son's studies, Mrs. Byron replied with promises she failed to keep. But when Dr. Glennie became firmer and less conciliatory the lady's brow clouded. There were scenes in which the school master showed displeasure, and the lady became angry, followed by still stormier scenes that ended with Mrs. Byron in hysterics. Mrs. Glennie gently tried to manage this ungentle and exceed-

*Continued from ALIENIST AND NEUROLOGIST, October, 1898.

ingly troublesome mother but succeeded no better than her husband. The boy's guardian intervened between the belligerents at the instance of the tutor. The earl decided that Mrs. Byron's inconvenient visits to Dulwich Grove should cease and that George's studies should not be interrupted during the six working days of every week. With due regard for the mother's feelings and not a little to the school master's disappointment, it was however, decided that Mrs. Byron should have a weekly visit from her son from the Saturday to Monday, on condition he was sent back to school on Monday in time for lessons. When Mrs. Byron showed her regard for this agreement by keeping the boy with her till Monday afternoon, till the middle of the week, and even on one occasion for an entire week beyond the time appointed for his return whereupon the earl was again entreated to speak in the interest of tutor and pupil.

By this time Lord Carlisle's power over Mrs. Byron was at an end. The woman whose insolent speech in Dr. Glennie's study had often been audible to the servants in the kitchen and the boys in the play ground, was not likely to stand in awe of an earl. At Lord Carlisle's last interview with Mrs. Byron he left her with the determination to see as little as possible of her in the future. Confessing himself beaten by the virago, with whom he never again condescended to bandy words, the earl said to Dr. Glennie "I can have nothing more to do with Mrs. Byron. You must now manage her as best you can." Lord Carlisle thought too unfavorably of the boy of halting gait and clouded brow, heavy features and sullen look, who spoke with his mother's brogue, who could not enter a room without dropping his eyes to the carpet from a shyness in no way distinguishable from the shyness of rusticity. Indeed who could have predicted thus early, as Jeafferson remarks, that this sheepish, awkward, thankless little fellow, after almost surviving his Scotch accent, and learning how to conceal his lameness, would ten short years thereafter assume a shape of singular elegance and a face of peculiar loveliness and burst upon the world almost in the same instance as the greatest poet and brightest coxcomb of his

Sketch

generation. It is not wonderful that when the brown bud had changed to perfect blossom, Byron never cared to talk of the Dulwich school, which he remembered only as a place where his mother had made herself more than usually contemptible and he had played the part of a young cub rather than of a young nobleman.

To understand the real Byron, as Jeafferson remarks, instead of the unreal rather absurd Byron of romantic biography and realize the difficulties under which he fought a painful way to a premature grave, the morbid propensity to fatten as well as the club foot should not be forgotten. It should also be realized how the two stigmata worked together in a way to increase degeneracy. Byron did not become unwieldy corpulent till he ceased growing in height. But among the Harrow school boys there could be found no stouter boy than that Byron who a few years later was remarkable for delicacy of face and elegance of figure. The sarcastic remarks of coquettish girls and women on his obesity must have deeply fixed the objectionable features of this stigma of degeneracy upon Byron's mind. To their deep wounds, not to vanity, must be ascribed Byron's later unhygienic battles against obesity.

In dealing with Byron's hatred of Harrow in his earlier years, the brutal system of fagging still existent in such schools must be taken into account. This system of allowing young delicately trained boys to act as menials to upper class boys can not but be regarded as extremely brutalizing on one hand and tending to produce sycophantic cads on the other. Had Byron not been of a degenerate stock, such a training must inevitably have produced suspicioinal egotism from the sense of injustice tolerated by the authorities. Certainly it tended to make Byron overestimate the effect of his deformity upon the minds of others. It is clear that the period of his extreme unpopularity was identical with the period of his hatred of the school and his misery in it. As an underling he was pugnacious, resentful and in general disfavor. When he had risen to a position to command and indulge his characteristics and essentially chivalric though slightly vainglorious taste for protecting little fellows

Boys
vs
obesity

Byron
at
Harrow

and patronizing his juniors, he ceased to provoke enmity and gained a reputation for kindness. As a junior he had good reason for disliking the school where even the infirmities of which he was so sensitive exposed him to insults. When later the coarser royalist newspaper snobs sneered at the bodily as well as mental deformity of the wretched rhymester, who not content with maligning Christianity had even presumed to lampoon the Prince Regent, Byron, with affected indifference, remarked that he had not gone through a public school without learning that he was deformed.*

In the domain of the affections Byron from boyhood, till his hair whitened, was of such acute a sensibility that it may well be termed morbid. To this excessive sensibility, and the various kinds of emotionalism necessarily attendant thereupon, must be attributed the quickness with which his "passions" succeeded one another. In part here occurred also the unequal balance of degeneracy. Chiefly in degenerates is such sensibility united with singular retentiveness of memory on minor subjects and with even stronger fancy. Byron could in two years so survive his first love for little Mary Duff as to be capable of a stronger passion for Margaret Parker and yet be deeply affected on hearing of the marriage of the object of the earlier attachment. In this was observable also the egotism of the degenerate which believes its love constitutes an ownership of the object loved. That the second love followed so soon on the first was due to the boy's sensibility. His agitation at the sudden announcement of Mary Duff's marriage arose in part from the quickened memory that brought before him all Mary Duff's lovable endowments, in part from the imagination that heightened the charms, which captivated his childish fancy and finally from an instantaneous renewal of his claim to ownership though it had been followed by a stronger attachment to another object. Though two "passions" could not coexist in the breast of a man so exceptionally constituted it was natural for several "passions" to occupy it successively and not to follow one another with perplexing

*Large use has been made in this as in the preceding articles of Jeafferson's "Real Lord Byron."

rapidity. In a being so swayed by memory and fancy, a passion long dead might at any moment revive. The poet's closest friends knowing little of Lady Byron, therefore, even to the last, regarded it as possible that he and she would survive their mutual animosity and resume the affection that for several months unquestionably existed between them.

To the same elements may be referred what was most remarkable in Byron's love of scenery. To afford him all the gratification possible from nature's aspects, it was necessary that a landscape should remind him of scenes admired in childhood. At Genoa almost on the threshold of his last year he wrote:

"He, who first met the Highland's swelling blue,
Will love the peak that shows a kindred hue,
Hail in each crag a friend's familiar face
And clasp the mountain in his mind's embrace
Long have I roan'd through lands which are not mine
Adored the Alp and loved the Apennine
Revered Parnassus and beheld the steep
Jove's Ida and Olympus crown the deep:
But t' was not all long ages' lore nor all
Their nature held me in their thrilling thrall
The infant rapture still survive the boy
And Loch-na-gar with Ida look'd o'er Troy
Mixed Celtic memories with the Phrygian mount
And Highland linn with Castalia's clear fount.
Forgive me, Homer's universal shade,
Forgive me Phœbus, that my fancy stray'd
The north and nature taught me to adore
Your scenes sublime, from those beloved before."

In this respect the man was faithful to the boy. In the pleasure which came first at Malvern, and afterwards at Cheltenham, in his fourteenth summer, from the hills that reminded him of the Highland mountains, delight at the scenery offered to his gaze was characteristically blended with delight at the scenery which quickened memory brought before his mental vision. Moore urges that "a boy gazing with emotion on the hills at sunset, because they remind him of the mountains among which he passed his childhood, is already in heart and imagination a poet." Countless boys without a single thread of imaginative force, and with no feeling more poetical than the homesickness that causes the dullest Swiss exile or any brainless Savoyard organ grinder to pine for his native scenes, have, as Jeafferson remarks experienced similar emotions under similar circumstances. Byron's appreciation of natural scenery largely owed its origin to association and the influence of environ-

ment rather than the aesthetic sense which Moore supposed must be innate in a poet. This aesthetic sense far from being innate so far as natural beauty is concerned, is much more the result of environment and training than is usually supposed. The nineteenth century has gained a sense of natural beauty which the eighteenth lacked. Macaulay speaking anent the Celtic part of Scotland truthfully says:

SWEET

"What was known excited no feeling but contempt and loathing. The crags and the glens, the woods and the waters were indeed the same that now swarm every autumn with admiring gazers and sketchers. The Trossachs wound as now between gigantic walls of rock tapestried with broom and wild roses; Foyers came headlong down through the birchwood with the same leap and the same roar with which he still rushes to Loch Ness and in defiance of the sun of June the snowy scalp of Ben Cruachan rose, as it still rises, over the willowy islets of Loch Awe. Yet none of these sights had power till a recent period to attract a single poet or painter from more opulent and more tranquil regions. Indeed law and police, trade and industry have done far more than people of romantic dispositions will readily admit, to develop in our minds a sense of the wilder beauties of nature. A traveler must be freed from all apprehension of being murdered or starved before he can be charmed by the bold outline and rich tints of the hill. He is not likely to be thrown into ecstasies by the abruptness of a precipice from which he is in imminent danger of falling two thousand feet perpendicular, by the boiling waves of a torrent which suddenly whirls away his baggage and forces him to run for his life, by the gloomy grandeur of a pass where he finds a corpse which marauders have just stripped and mangled; or by the screams of those eagles whose next meal may probably be on his own eyes. About the year 1730 Captain Burt (one of the first Englishmen who caught a glimpse of the spots which now allure tourists from every part of the civilized world) wrote an account of his wanderings. He was evidently a man of a quick, an observant and a cultivated mind and would, doubtless had he lived in our age, have looked with mingled awe and

delight on the mountains of Invernesshire. But, writing with the feeling which was universal in his own age, he pronounced those mountains, monstrous excrescences. Their deformity, he said, was such that the most sterile plains seemed lovely by comparison. Fine weather, he complained, only made bad worse, for the clearer the day the more disagreeable did those misshapen masses of gloomy brown and dirty purple affect the eye. What a contrast he exclaimed between these horrible prospects and the beauties of Richmond Hill. Some persons may think that Burt was a man of vulgar and prosaic mind but they will scarcely venture to pass a similar judgment on Oliver Goldsmith. Goldsmith was one of the very Saxons who, more than a century ago, ventured to explore the Highlands. He was disgusted by the hideous wilderness and declared that he greatly preferred the charming country around Leyden, the vast expanse of verdant meadow and the villas with their statues and grottoes, trim flower beds and rectilinear avenues. Yet it is difficult to believe that the author of the "Traveler" and of the "Deserted Village" was naturally inferior in taste and sensibility to the thousands of clerks and milliners who are now thrown into raptures by the sight of Loch Katrine and Loch Lomond.

"Shall I tire you with a description of this unfruitful country where I must lead you over their hills all brown with heath or their valleys scarce able to feed a rabbit? Every part of the country presents the same dismal landscape. No grove or brook lend their music to cheer the stranger." Thus writes Goldsmith to Bryanton, Edinburgh, Sept. 26, 1753. In a letter written soon after from Leyden to the Rev. Thomas Contarine, Goldsmith says, "I was wholly taken up in observing the face of the country. Nothing can equal its beauty. Wherever I turned my eyes fine houses, elegant gardens, statues, grottos, vistas presented themselves. Scotland and this country bear the highest contrast: there hills and rocks intercept every prospect; here it is all a continued plain."

"His feelings may easily be explained. It was not till roads had been cut out of the rocks, till bridges had been

flung over the courses of the rivulets, till inns had succeeded to dens of robbers, till there was little danger of being slain or plundered in the wildest defile of Badenoch or Lochaber as in Cornhill that strangers could be enchanted by the blue dimples of the lakes and by the rainbow which overhung the waterfalls and could derive a solemn pleasure even from the clouds and tempests which lowered on the mountain tops."

This, so to speak, hypertrophied sensibility (resultant on the unequal emotional balance of degeneracy aided by environment as well as his keen sense of his stigmata) led Byron to evince intense appreciation of sympathy shown him by school comrades. The attempt has been made (as in the case of Shakespeare and Walt Whitman) to find in this, evidence of sexual inversion of the uranistic type.

With equal force and truth A. Moll* remarks: "There is nothing in his life or poems which would indicate a justifiable foundation for this opinion." Moll believes that the sexual invert charge is in part based upon the fact that Byron often travelled with young girls dressed in boy's clothes and in part was one of the many baseless calumnies against the poet.

While a hysterick female† has cited the biblical incest in "Cain" as evidence to support the hysterick delusion (born of degeneracy in Mrs. Byron) that Byron had relations with his half sister, still even the such paranoiac symbolism, failed to find evidence of uranism. Until Byron fell under the spell of the Countess Guiccioli, his Italian residence was marked by sexual excess of a vulgar type, but while calumny exaggerated this at the time, it spared Byron as to uranism.

The "Sonnets" seem to make a stronger case against Shakespeare if read from that point of view which regards the comradeship of the English-speaking nations as platonic expressions of sexual affection like that found frequently in the Latin and even high German races. It would be unjustifiable, especially in the latter, however to refer all

**Contrare Sexual-Emfinding*, Third Edition.

†*Mrs. Beecher Stowe*, *Atlantic Monthly*, Oct. 1870.

school friendships even between younger and older men to this sexual basis. In the "Sonnets" there is one stumbling block to the uranism theory. The friend of the "Sonnets" is for a time estranged by rivalry for a woman's favor from Shakespeare. The woman is loved by both. The estrangement is clearly put as an expression of normal sexuality not as rivalry between a woman and a male invert, for the favor of another male. In Shakespeare's age the English were less stoical in expression of feelings and affections than they are to-day. Friendship therefore would find expression of an intensity that in the nineteenth century might seem suspicious.

The case against Walt Whitman has been based chiefly on the tone of the poem "Calamos" which deals with comrade love. The intrinsic evidence of this poem was deemed by J. A. Symonds so strong that he addressed an enquiry to Whitman on the subject. This elicited a most emphatic indignant denial of any such significance to the poem. Despite this Havelock Ellis* inclines to believe that the poem is an expression, perhaps unconscious, of the pure, platonic, altruistic type of uranism. This view at first sight might be regarded as supported by the following stanza:

"The dear love of man for his comrade, the attraction of friend for friend,
Of the well married husband and wife, of children and parents,
Of city for city and land for land."

This very stanza however destroys the uranistic theory since the sexuality element is decidedly thrown out of consideration. The "Children of Adam" takes such an emphatically healthy view of sexual relationship even to coarseness that it is impossible to reconcile the mental tone of it with any uranism in the author. It is possible, it is true, for normally sexual poets to write uranistic poetry as a psychologic or poetic experiment. Thus Eugene Field (as a literary experiment in a fit of enthusiasm for the period of Horace) wrote a uranistic poem totally lacking in the spontaneity and destitute of the *con amore* spirit of his childhood poetry. It smelt of the smithy and had, to borrow Sir Walter Scott's remark, the mental tone of the

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"forced impudence of a bashful man." The imitation by the uranist of the normal tone as to sexuality is as practically impossible as the assumption of normal sexuality itself. The mental attitude of Byron, Shakespeare and Walt Whitman toward normal sexual relations is a sufficient disproof of the uranism accusation. Of course such an argument would not be valid against a claim for the existence of psychical hermaphroditism but of this neither Shakespeare, Byron nor Walt Whitman is accused nor are they charged with sexual perversion secondary to excess. The healthy tone of Whitman as to sex was so obvious to Emerson that he early became one of the admirers of the "good gray poet." Emerson had made sex a biologic subject of study from the analytic standpoint. He was thus led to detect the germ of homosexuality in Margaret Fuller. His admiration for her did not prevent him from dispassionately stating: She had a feeling that she ought to have been a man and said of herself "A man's ambition with a woman's heart is an evil lot." In some verses which she wrote "To the Moon," occur these lines:

"But if I steadfast gaze upon thy face,
A human secret, like my own I trace,
For, through the woman's smile looks the male eye."

And she found something of true portraiture in a disagreeable novel of Balzac "Lea Livre Mystique," in which an equivocal figure exerts alternately a masculine and a feminine influence on the characters of the plot.

Emerson had a keen biologic insight into still darker sexual phenomena. In his poem on introspective philosophy the following simile is drawn from the sadism of the female spider:

"That demon spider that devours her mate
Scarce freed from her embrace."

Emerson who detected the sexual abnormality in Margaret Fuller, would have been quick to see it in Whitman. *Welt-Schmerz* or "world weariness" is induced in the uranist by a sense that he differs from his fellows. Whitman has none. On the contrary he designates this feeling when expressed in poetry as the "literature of woe" and selects Byron (in whom it was due to the stigmata) for criticism

as its exponent. Whitman feels himself one with mankind. Despite the conventional cant anent corruption in the States he hails the future of American democracy as strongly as did Byron through the teachings of his mother and May Gray.

"Childe Harold" shows how little Byron profited by the classic training of the school so largely indebted to him for its celebrity. Had he come to the school at an earlier age after better preparation Byron might have taken a more favorable view of the educational method of England's public schools albeit his view is no more pessimistic than that of Dr. Arnold.

Coming to a school with an ignorance which placed him at a disadvantage toward class mates greatly his inferiors in natural quickness and age, he never had heart for the steady effort which alone could enable him to compete for honors. No boy ever brought less Latin and Greek to Harrow or after rising to the highest form carried less away to the university. The Greek plays which he gave to the Harrow library demonstrates by his own handwriting, the insignificance of his classical attainments when in the purely philologic, albeit not literary sense, they were at their height. To mathematics he had a strong repugnance. At a later period of life he experienced no little difficulty in auditing weekly bills. Had he distinguished himself in Latin and Greek it would have been less remarkable that he went to Cambridge without having acquired facility in English orthography. In the early nineteenth century it was a point of honor with a public school boy who knew Homer well to spell English indifferently. The bad spelling of the Harrovian who prided himself on his knowledge of English literature deserves attention. While it may be regarded as indicative of the carelessness with which he read his favorite authors it is also evidence that he was not free from the school bias against English as a literary language.

*comes of
the school*

But if he were weak in Latin and still weaker in Greek, Byron distinguished himself in declamation. In these exercises so excellently designed to qualify the youthful orators for public life, Byron was successful in attitude, gesture and

declamation

vocal address. On one occasion Byron greatly impressed his most critical hearers. After delivering the earlier part of his written address he suddenly broke away from the restraint of the written words and (to Dr. Drury's surprise and sympathetic apprehension for the boy's failure) passed to extempore utterance that without impediment flowed through well balanced periods to a felicitous conclusion. Dr. Drury asked why he had altered his declamation. Byron declared he had made no alteration and did not know in speaking that he had deviated from it one letter. From knowledge of his temperament Dr. Drury was convinced that, fully impressed with the sense and substance of the subject, he was hurried on to expressions and coloring more striking than what his pen expressed.

Note in margin: *not in tent*

The well deserved scathing review of "Hours of Idleness" stung Byron for the nonce into the employment of powers which continuously exercised would have placed him far beyond the "brilliant boys of poetry" among whom Swinburne not unjustly ranks him. Byron's declamations and early poetry were not much above those poured out in floods by classically trained youngsters whose poetic tendency vanishes with the close of puberty. The "Hours of Idleness" in the main is made up of poems rather below the magazine standard of poetry.

(To be Continued.)

IMBECILITY AND THE INSANITY OF IMBECILITY BEFORE THE LAW.*

Murder by Suggestion.

The State of Missouri vs. Benj. F. Cronenbold, Charged with Murder in the First Degree.

A Medico-Legal Record.

By C. H. HUGHES, M. D., St. Louis.

Former Superintendent and Physician of the Missouri State Lunatic Asylum,
Honorary Member British Medico-Psychological Association, Professor of Psychiatry, etc., and President of the Faculty,
Barnes Medical College, etc., St. Louis.

“THE feelings of horror and vengeance excited by the bloody deeds of the insane, completely unfit the popular mind for a careful and impartial investigation of the plea of insanity, and ought to convince us that the mental condition of the accused,” when insanity is suspected, “should be examined by men who have become fitted for such duties by a peculiar course of study and experience.” “It is not necessary to go into a labored argument to prove that this method of determining the grave and delicate question of insanity, must be infinitely more satisfactory than that of summoning medical witnesses to the trial—most of whom have but very imperfect notions of the disease,

*Revised and Republished.

and probably have not had the least communication with the accused—and forcing out their evidence amid the embarrassment produced by the queries of ingenious counsel, bent on puzzling and distracting their minds. If a physician, after listening to divers, vague and rambling details concerning a person's ill-health, and looking at him across the apartment, without being permitted to address to him a single word, or lay a finger on his person, should then be required to say, on his oath, whether or not the individual in question were laboring under inflammation of the lungs, bowels and kidneys, he would scarcely restrain a smile at the stupidity which should expect a satisfactory answer." "And yet, absurd and foolish as such a course would be considered in the abstract, it is the only one recognized by our laws, when the disease, whose existence or non-existence is to be determined, happens to be insanity." "When mental derangement is suspected, there are many physical symptoms and numerous other circumstances that can not be investigated in an hour or day, but require a course of diligent observation that may occupy weeks or months before the suspicion can be confirmed or disproved."

Thus long ago wrote almost *verbatim*, as we have penned it, our venerable *confrère*, Dr. Isaac Ray, in the first edition of his excellent work on the Jurisprudence of Insanity, and the words still stand in the latest editions, as scientifically true as they were when first they were uttered. And they have begun to bear their legitimate fruit in the Criminal Jurisprudence of the United States, in the substitution of commissions of specially skilled medical experts, in lieu of the ordinary jury, to pass upon the question of mental unsoundness when raised in criminal cases, so that the conclusion of the afore-mentioned authority,—"that in criminal cases, where insanity is pleaded in defense, the ends of justice would be best promoted by the appointment of a special commission, consisting of men who possess a well earned reputation in the knowledge and management of mental derangement, who should proceed to the examination of the accused, with the coolness and impartiality

proper to scientific inquiries,"* will probably soon become the rule of action in these cases, throughout the whole Union.

New York has taken the initiatory by statutory enactment, and it is to be hoped that Missouri will at once imitate her example. One of the courts of the latter State has recently practically adopted the course now enjoined by statute in New York, in the case of "The State of Missouri vs. Benj. F. Cronenbold, indicted for Murder in the First Degree."

A commission of experts was appointed by the court, sworn to discharge their duty faithfully, and empowered to send for persons and papers, to examine witnesses under oath, to make personal examination of the prisoner, and otherwise proceed as their judgments might suggest; their decision to determine the question as to the disposition of the prisoner, and the further progress of the trial.

The principal attorney for the defense was put under oath as to the possession of any facts which might bear upon the question of feigning, and every thing was done by the court, the prosecution and the counsel for the defense to elicit the whole truth, even to the volunteer aid, proffered by the attorneys, on both sides, to examine witnesses.

Nothing was lacking in the whole procedure to ascertain the exact truth, except the absence of rebutting testimony, and the presumable legal incompetency of the commission to determine the precise legal value of the testimony of witnesses. The prosecution, however, had no testimony to offer in rebuttal of the issue of insanity.

It might be better, however, if in all future commissions of a similar character, the commission should sit and examine the witnesses in the presence of the court. In the present case, the presence of the court was not essential.

The following history of this remarkable case embraces all the essential facts connected therewith, together with so much of the prisoner's life history, as was deemed necessary to enable the commission to form a correct judgment on the question before them.

*Ray's *Jurispru. Insan.*, p. 70, 4th edition.

In the narration, much irrelevant detail of the official records is here sacrificed for the sake of brevity.

HISTORY.

Benjamin F. Cronenbold is twenty-three years of age, American born, of German parentage. On December 9th, 1873, he shot and killed Richard Boetticher, who, at the time, was betrothed to his (Cronenbold's) sister. The homicide was committed on the eve fixed for the nuptials, and while the bridegroom, accompanied by his spouse and her mother, was leaving the Cronenbold residence, to have the ceremony performed at church.

The murdered man, Boetticher, was a coachman and head servant in the Cronenbold family, introduced to the family, and employed by Cronenbold, who was at the time, himself, engaged to be married to a former female domestic in the same household. To break off this match, which the mother and uncle disapproved, (Cronenbold's father was not living,) the son was induced to go to Europe, in April, 1873, but returned after a brief tour, and three months before he killed Boetticher, with no abatement in his attachment for Miss Hendricks, his affianced. After his return he heard of boasts having been made by the deceased, (Boetticher,) reflecting upon the chastity of his mother and sister, and on the fourth of December, his mother informed him that his sister and Boetticher were to be married that evening. The same day he received an anonymous letter, reciting slanderous rumors in circulation, respecting his mother's and sister's virtue, having their foundation in the statements made in public, by his sister's intended husband, and urging him to vindicate the honor of the family, by visiting summary vengeance upon the defamer of his mother and sister.

That evening, (December 4th,) he prevented the attempted consummation of the nuptials, by shooting Boetticher in the leg, and when the next attempt to marry his sister was made, (December 9th, as already stated,) the homicide was committed.

The rumors and the anonymous letter, produced great

agitation and excitement in the mind of Cronenbold, which culminated in the killing, and ended as we shall see hereafter, in complete mental and physical exhaustion. After his arrest and incarceration, Cronenbold seems not to have reasoned upon either the propriety or consistency of his conduct in killing Boetticher, or to have reflected upon the consequences of the murder, to his family or himself.

Boetticher, if he had seduced Cronenbold's mother and sister, of which there was no evidence to Cronenbold's mind, except rumor, having its probable foundation in the statement of Boetticher, over his beer, in a saloon, was about to go far towards giving the lie to such statements, and make the only reparation possible, by an unsolicited and voluntary matrimonial alliance with the family. Cronenbold made no effort to obtain the exact truth or falsity of the statements attributed to the murdered man. He did not make use of even the most ordinary diligence, to assure himself of any sort of justification in the eyes of the public, for the deed he was about to commit, in so open and undisguised a manner. There was indeed, no evidence to show that the boasts of Boetticher were founded on facts. There was no evidence that the social disparity between Boetticher and Cronenbold's sister, influenced Cronenbold to commit the murder. Boetticher lived on terms of familiar equality with the Cronenbold family, although their chief servant, and was in no way inferior to the servant girl, whom Cronenbold intended to marry.

Cronenbold even looked up to Boetticher as one possessed of superior mental endowments to himself, which was indeed the fact, as will be shown hereafter. He seems to have had no rational justification to himself whatever, evolved from the operation of his own mind, for the committal of the deed, but gave at the coroner's inquest, the *imbecile reason* that "*they told him he ought to do it,*" meaning by they, those who had circulated the aforementioned rumors, and were concerned in the anonymous letter, and he seems to have regarded this as an all-sufficient justification.

He does not say to the coroner, that the virtue of his

mother and sister had been defamed, the good name of his family destroyed, and he was impelled, in a fit of fury, to avenge their dishonor.

He makes no attempt at escape, denial or evasion of the act. Before the coroner he manifests no real appreciation of the momentous importance of the examination to his own future. He maintains neither silence, nor reserve on any subject, but answers, without individuality, pretty much as the interrogatories of the coroner lead him, without appearing to comprehend the ultimate weight and significance of his replies against himself. His answers are mostly in short sentences, and not always intelligible, although in the examination by the coroner, who was incapable of forming a correct judgment as to his mental *status*, language, and a combination of expressions, are attributed to him, which he had not the mental capacity to frame, or to express, (if framed for him) in so ready a manner. He says not a word in palliation of his crime, and under the interrogatories and promptings, and leading questions of the coroner, whose hypothesis is evidently unjustifiable murder, he weaves for himself a web of criminality, from the meshes of which, no sane man could possibly escape, and he is either unconcerned or unconscious of the part he is taking in constructing this net. In a subsequent examination, March 21st, 1874, before the Court of Criminal Correction, "He had so little comprehension of his situation, that when the examination was closed, and he was remanded to jail, he thought that his trial was over and that he might go free."

In jail, when his attorneys, friends or physicians visited him, he never introduced any subject of conversation, but would sustain, in an imperfect and unsatisfactory manner, a conversation conducted by interrogatories propounded to him, to which he would contribute, in a capricious way, replies in monosyllables or short sentences, sometimes pertinent to the subject, but often irrelevant. For example, when his intended wife was present at one of the writer's interviews, the writer asked him in an undertone, and unobserved by her, "if she was his sweetheart," to which he replied,

"yes, sometimes." To the salutation, "good afternoon, how do you feel to-day," he responded, "I feel well enough, but it don't correspond."

His counsel never received a suggestion from him, concerning the conduct of the trial, and he asked them no questions, except to inquire, without much concern or emotion, as to when they would be through with him, or when it would be over. When the writer would ask what he meant by "it" in this connection, he would never answer unless the interrogatory suggested the answer, thus, "do you mean the trial," to which he would respond "yes." In the same way he would indicate that by the term "it," he meant the court, by saying "yes," when the court was suggested by the interrogatory.

He had private apartments in the infirmary of the jail, (which was empty of patients,) and a private servant to attend him, night and day, but did not seem to regard this as a favor or privilege, but several times asked why he could not have a cell, and "be with the others," meaning the other prisoners.

He never introduced any subject of conversation with any one. He was unsatisfactory and indifferent, alike to his mother, his sister, his betrothed, his attendant, his counsel, and his physicians. The writer made him seventeen or eighteen visits, sometimes in company with others, but mostly alone, observing him at meal times, between meals, and when asleep, and watching him during his waking hours, when he did not know he was the subject of observation. He was always the same. Indifferent to his dress and surroundings, eating mechanically, and in silence what was set before him, taking his medicines generally in the same way, though occasionally refusing the latter, when no amount of persuasion could induce him to take them, reading mechanically and without reflection when his book or paper was right side up, and conversing in his peculiar way only when lead to talk by the psychical influence or commanding and resistless manner of a superior mind.

He never appeared unconscious of the murder, but was

always unconcerned or unconscious as to its real effect upon the peace and happiness of his family or himself.

This was his mental condition, in his best states of physical health. He never betrayed either remorse or exultation over the homicide, and was entirely devoid of emotion of any kind on the subject. No subject whatever, seemed to excite or interest him in a rational way. He would sometimes manifest a little ill-defined and transitory feeling at being restrained of his liberty, and was at times displeased with his "sweetheart." In his amiable or rather less indifferent moods he never returned her caresses, and was indifferent alike to the *souvenirs* which she often brought him, and to her assiduous efforts, in various ways to excite a reciprocal affection, while he would evince displeasure, when she would remain longer than usual away from him.

Cronenbold before the coroner, and Cronenbold before the court, were two different persons. Before the coroner he appears as the imbecile, extenuating a crime for which life is the lawful forfeit, with the logic of a child.

He tells the coroner he committed the deed "because he had been told to do it." How like a child. Before the court he betrays a degree of mental weakness, far greater than that which was natural to him. Here there is manifest an aggravated impairment of all his powers, the result of disease. Imbecility is arrested cerebral development, and is not progressive, either upwards or downwards, except through assiduous training and consequent cerebral and mental growth on the one hand, and on the other, through the retrogressive processes of disease.

The degree of mental power of the imbecile, though susceptible of some improvement by education, depends upon the period at which the arrested cerebral growth takes place. There is a wide mental chasm between the lesser degrees of imbecility, and the ordinarily recognized grades of idiocy. Cronenbold was by nature imbecile in the ordinary mental attributes of mankind. Before the coroner he displayed a weak mind, before the Court of Criminal Correction he displayed no mind. He was not born an idiot,

but had become much like an idiot. He had become demented through disease, as the following facts in his history, subsequent to his appearance before the coroner, and prior to his examination before the Court of Criminal Correction, show.

Soon after his incarceration in jail, there supervened a condition of extreme nervous exhaustion; so extreme was the depression of all the powers of life, that he could not turn himself in bed; liquid nourishment, the only food it was possible to administer, had to be poured down his throat, the urine had to be evacuated with the catheter, and persistent insomnia could be overcome only by morphia, by hypodermic injection and large doses of chloral hydrate and bromide of potassium. He was obstinately constipated, and required the most active cathartics and clysters, even when not under the influence of opium. His temperature was much of the time above normal, his pulse was quick and frequent, and pupils dilated in the beginning of his attack. His gaze was meaningless, and his mind almost a blank, so that his family physicians, the Drs. Engleman despaired of his recovery. He was skillfully treated with reconstructive tonics and calmatives of the nervous system, so that by March 21, 1874, something over three months from the beginning of his treatment he had sufficiently recovered his physical health to appear before the Court of Criminal Correction, for preliminary examination. The imbecility of Cronenbold was not sufficient to account for all of his acts before the homicide and imprisonment.

It must be borne in mind, that in imbecility, as in other abnormal conditions, there is not only deficiency and irregularity, but also a great tendency to diseased cerebral action,* and this was the case with the accused, not only as we have shown, while in prison, but before. His dementia was preceded by delusions and vague feelings of dread and suspicion, and by an impression that he was not properly appreciated after his return from Europe. (Paranoiacal egoism and delusion.)

He said that during the last three nights, while on his

*Ray, 4th edition, p. 119.

return home, he had not slept, and that he had reached home too soon. Although his home was in the city, he took apartments at a first-class hotel, to "wait until he made up the time." He expected his friends to meet him, though he had not notified them of his arrival. (Sent his card home and expected to be called on as an important person at the hotel by his father and mother.)

When he went home, he asked his mother if she was his mother, and if that was their house, though neither had undergone much change during his less than six months absence. He knelt before the picture of his father, and prayed him to avert a calamity which he felt was impending. He suspected the purity of his food, and would not eat it until after it had been inspected by his affianced, and passed to him and pronounced all right by her.

His appetite was capricious. His conduct in various ways was singular. He would lock himself in his room and remain there several days, and not come out even to eat. On one occasion, he fired a pistol up in the air in his mother's presence, without notifying her of his intention. He was quarrelsome and excitable at the table, and would fly into a passion, and throw dishes about without apparent cause, but everything connected with the murder on his part, showed the *design* of a weak, rather than the *motiveless* or *delusional* act of the deranged mind.

He bought the pistol, and shot Boetticher just in time to prevent the consummation of that which he sought to thwart. If he had delusions, or what he thought about the dishonor of his sister and mother does not appear. He was not under medical observation at the time, or immediately preceding the homicide, consequently his precise mental *status* can not be determined.

He was in a state of great excitement from the time he learned of his sister's engagement, heard the rumors about his mother and sister, and received the anonymous letter, until after he had killed Boetticher, when the prostration of all his powers became manifest, as already described.

It was at this stage in his history, though after he had

improved in physical health, that his counsel, in May, 1874, asked a consultation of medical gentlemen, to determine his mental condition. The circuit attorney agreed to the proposal of defendant's counsel, Lieut. Gov. Johnson, Joseph G. Lodge and L. Gottschalk, and recommended the court to appoint a commission of five medical experts to examine into the present mental condition of the defendant; the counsel for the prisoner holding that, in accordance with common law, no defendant could, under any circumstances, be tried for an offense when in an unsound state of mind, he being incompetent to make a defense when in such a condition.

The court acceded to the request and made the following order:

"It being suggested to the court by the circuit attorney, and by the counsel for the defendant, that Cronenbold is now mentally insane, so that he can not be tried at this time upon the indictment preferred against him; therefore, on motion of the circuit attorney and of the counsel for the defendant, the court doth hereby appoint as experts, Drs. Chas. W. Stevens, J. K. Bauduy, C. H. Hughes, W. B. Hazard and George Engleman, physicians of name and fame of the city of St. Louis, whose duty it shall be to make inquiry into the mental condition of the defendant, and make report to this court, at their earliest convenience, of their opinion touching the matter of said alleged insanity, such report to be in writing, signed by them, and verified by affidavit in open court."

The conclusion of the consultation, based upon personal interviews, and such of the prisoner's history as they had before them, was "imbecility," making no reference to the prisoner's insanity, it being evident that no harmonious conclusion as to the kind or degree of insanity the prisoner may have had, could have been reached, as what follows will show. For the same reason they wisely abstained from attempting to define the degree of imbecility. The writer's conclusion of imbecility was based:

1st. Upon the reason which he gave the coroner for

the deed,' and the absence of all individuality in the presence of the coroner, and of a due appreciation of his situation.

2d. His indifference as to the result of his act to himself, and to his family. "Such conduct, not only displays insensibility, whfch is not rare in hardened criminals, but betokens the mind of a child, and indicates stupidity, silliness and imbecility"** in one of Cronenbold's age.

3d. His personal appearance, physical characteristics, and life history. He was feeble and diminutive in body, his face was pale and inanimate in appearance, his eye restless and without expression, his whole make up and demeanor, revealed to an expert, more than any description can impart, his real mental state. When addressed, as we have stated, the monosyllabic responses, or short sentences in which he would answer, required and indicated little capacity for complex mental effort and the frequent irrelevancy of his answers, betrayed a confusion of mind, and an inadequate conception of the circumstances surrounding him, which could not be feigned. He was too consistently stupid for simulation. From first to last he never sought; nor had a private interview with his attorneys, nor did he have any choice or desire to have choice in their selection. His whole manner was passive, he was an automaton, with the power of feeble mental motion within himself, but set in motion, and moved by others. He was first the imbecile, and next the dement; a naturally weak mind, "by reason of a bad descent, born with a predisposition to insanity," yielding under the stress of adverse events, to disease, and progressing still further towards mental extinction.

As with families in whom that native constitution of nervous element exists, there is always, under adverse circumstances, a retrograde degeneration, so with individuals. In the imbecile, if life continues into full manhood, we expect mental retrogression, rather than progression. The brain inherently feeble, like the naturally weak body, is more liable than the naturally sound and healthy, mental or physical organization to take on diseased action.

*Ray's Juris. Insan., 4th Ed., p. 119.

We have spoken of Cronenbold, never taking the initiatory in conversation. He had always to be pressed by leading questions, to obtain anything from him, equally upon subjects of vital interest to himself, as on the most trivial matters. To him grave and light subjects seemed of equal significance.

One of the medical gentlemen, Dr. Stevens, was personally acquainted with Cronenbold from the latter's early childhood, and gave his opinion, as to his feeble mindedness, as compared with the average youth and young man of his age, from many years of observation, and from what he knew of Cronenbold senior's opinion of the mental capacity of his son. A long time before the homicide, he had heard the father of Cronenbold lament his son's lack of capacity, and say he thought he would never be able to take care of himself.

We think Cronenbold's facial angle is not far from 80°, though it was not measured. His height is five feet three and three-quarter inches, in his boots. He never objected to, nor asked our object in measuring his head, and did not seem to think it strange. The measurements are as follows:

Circumference,	20½ in.
Bi-parietal diameter, (between the meatuses,)	5½ in.
Longest antero-posterior curvature, from occipital protuberance to root of nose	11¾ in.

We give these measurements, as a matter of fact, for what they may be worth. The cranial measurements are slightly below the average, and comport with the actual natural state of Cronenbold's mind, though under very favorable antecedent ancestral conditions and subsequent favorable circumstances, from birth to the present time, he might, even with such cranial capacity, have passed on through life with average intelligence.

In giving the cranial measurements we would not have it inferred that cranial deformity *always* exists in imbecility.

There are even "many *idiots* in whom the brain and body appear to be well formed, while the mental development remains at the lowest stage; accidental affections of the brain, arresting its development after birth, while the

cranium and rest of the body go through their normal growth, have occurred in some of these cases; epilepsy is not uncommonly such a cause of idiocy," as he who writes, and most of those who will read this paper, know from personal observation, but it is equally impossible, as Maudsley says, in some of these cases, to assign any definite cause of the arrest of development. There may be no sign of mental degeneracy in arrest or deformity of cranial development, and yet be "abundant physical cause of psychical defect," in the constitution of the molecules of the cerebral mass, without our being able to recognize them; molecular conditions which belong to that inner life of nature, that is still impenetrable to our most delicate means of investigation, still inaccessible to our most subtle inquiries." (Maudsley.)

We can not expect to gauge with accuracy, the precise degree of mental capacity from cerebral measurements, inasmuch as we can not yet discern even "the nature of those hidden molecular activities, which are the direct causes of the different tastes and smells," those different molecular activities themselves depending, doubtless, upon structural differences in the nerve molecules of the auditory and gustatory nerves, or at their seat within the brain. Nevertheless, the greater proportion of imbeciles and idiots, are found to have the development of both mind and body arrested, and we may, with Maudsley, and all others, who have given the subject much attention, draw from our observation of these unfortunates, "the certain conclusion that there may, by reason of unknown conditions affecting nutrition, be every degree of imperfect development of mind and body, down to actual incapacity to develop at all." When we find cranial deficiency or deformity, conjoined with mental weakness, we may safely conclude that the imbecility is congenital and lasting. The writer speaks only for himself, as to the manner in which the conclusion of imbecility was reached, and is aware how "impossible it is to specify any particular rules for ascertaining the mental capacity of imbecile persons, how circumstances always proper to be taken into account, are constantly varying with

each individual case."* Few cases, says the writer just quoted, subjected to legal inquiry, are more calculated to puzzle the understandings of courts and juries, to mock the wisdom of the learned, and baffle the acuteness of the shrewd, than those connected with questions of imbecility.

Such cases as Cronenbold's, without the supervention of insanity, become, as an eminent writer truly observes, "difficult cases for medico-legal inquiry, in which the decision, come to whatever it may be, may be challenged, and not without reason." (Maudsley.)

"Much of the difficulty consists, no doubt, in a want of that practical tact which is obtained by experience in unravelling their intricacies, and of that knowledge of the psychological nature of this condition of mind which directs the attention, exclusively, to the real question at issue."† Had no question been decided but that of imbecility, the question would still have remained to what extent was the prisoner responsible for his crime, and Cronenbold's escape from a felon's punishment, would have been doubtful, for "little indulgence" has ever been shown to the plea of imbecility, in criminal courts, and none could have been expected here, where the individual had acquired some education, and been assiduously taught the proprieties and amenities of good society; "his weakness concealed, and polished over by cultivation. While the public feeling has become too refined to tolerate the infliction of blows and stripes on the imbecile and the mad, in the institutions where they are confined, * * * it can still be gratified by gazing on the dying agonies, of a being unable to comprehend the connection between his crime and the penalties attached to it, and utterly insensible to the nature of his awful situation. The voice of reason and humanity, which speaks successfully in the first instance, is in the last, drowned by the more imperious tones of prejudice and passion."‡ The following extract from a daily paper, published at the time the case of Cronenbold was engaging public attention, shows this to be true:

*Ray, p. 131.

†Ray, p. 131.

‡Ray, p. 130.

Cronenbold was admitted to bail by the Judge of the Criminal Court on Tuesday, 6th inst. Cronenbold, it will be remembered, killed his sister's intended husband so as to save the family the disgrace of being united in marriage to a plebian. The fact is, the murdered man was too good for them, both as to family connections and intelligence. He was, however, poor, and was at the time of the homicide, engaged as a servant in the Cronenbold family. After the commission of the offense, Cronenbold who had hitherto been somewhat childish for a boy of his age, exhibited what was thought to be insanity, and the skillful and adroit attorneys for him, Messrs. Johnson, Lodge and Gottschalk, concluding to make this defense for him upon trial, had the five "Insane Physicians" of this city to visit him almost every day. These frequent visits of such men would make men of stronger minds than Cronenbold crazy. The attorneys and physicians found in the Circuit Attorney an easy prey to their theory, and he consented to appoint a commission, which consisted of these very physicians. They, of course, after a few hours' deliberation—long enough to write out this report—reported him insane. A bond having been given for his appearance, he was released. As there is neither law nor precedent for such proceedings, the bond is a nullity. The defendant will be sent to Europe to be treated, not as an insane man, but to break him off from a habit which young men indulge in, sometimes to the extent as to affect them more physically than mentally. Messrs. Johnson, Gottschalk & Lodge, managed the case well, and saved their client from a punishment which he justly merits—the gallows.

"Idiocy and the higher degrees of imbecility are congenital,"* or so nearly so, that it can not be discerned at what time after birth they may have originated, in any particular case. "For all practical purposes we may define them as consisting in a general destitution of mental powers that were never possessed. The lower degrees, or those which approximate more closely to the average natural standard of mind, consist in arrested cerebral development, at different discernible stages after birth," and the degree of mental deficiency depends, of course, upon the periods at which cerebral development ceases to keep pace with the normal evolution of the organism, accordingly we may expect to find in the feeble-minded, various degrees of deficiency, either in those faculties which acquaint them with the qualities and ordinary relations of things, or in those which furnish them with the moral motives that regulate their conduct to their fellow men.

"In imbecility, the development of the moral and intel-

*Ray, p. 320.

lectual powers is arrested at an early period of existence. It differs from idiocy, in the circumstance, that while in the latter there is an almost utter destitution of everything like reason, the subjects of the former, possess some intellectual capacity, though far less than is possessed by the great mass of mankind. Imbeciles can never attain that degree of knowledge which is common among people of their own rank and opportunities in life, though it is very certain that they are not insusceptible of the influences of education."*

Thus from the testimony of high authority, we may have arrested development, taking place from an impairment of the perceptive or reflective faculties, so as to produce only the slightest shade of stupidity, apparent only to the most intimate acquaintance, to that degree of mental deficiency which impresses the least skilled observer, with the fact that its possessor is a fool.

Hoffbauer, acknowledging "the various and almost imperceptible shades of difference between one case of imbecility, and another, has reduced its numberless gradations to five degrees, and those of stupidity to three. To these, as described and explained by him, he looks for the means of a consistent and rational application of legal principles that should regulate their civil and criminal relations."†

To those practically familiar with the various degrees of mental deficiency as seen in our insane asylums and schools for the idiotic and feeble minded, the herculean labor of partitioning off into but eight classes, these cases, each of which constitute a class almost *sui generis*, will be appreciated, and the remarkable success which has crowned his attempt will be duly applauded. The division might have been much simplified by throwing the three degrees of stupidity into the classification of imbecility.

The natural condition of young Cronenbold's mind, both as a boy at school and after he had "grown to man's estate," is closely approximated in Hoffbauer's description of the first degree of imbecility, which we here transcribe, together with Hoffbauer's first degree of stupidity.

*Ray, p. 85.

†Ray, p. 88.

"In this degree of the affection, the individual can very well judge, respecting the objects to which he is daily accustomed, and in familiarity with which he may be said to have grown up. In the pursuit of his daily concerns he often shows a minute exactness that appears to him a matter of absolute necessity. His memory is very limited, not that he loses absolutely the *remembrance* of things, but because he can not apply his recollections according to his wishes. He scrupulously observes whatever he thinks becoming in his station, because he fears to offend by neglecting it. When he gives himself up to avarice, there is observed in him rather an apprehension of losing, than a desire of accumulating. The nature of his daily occupations makes but small demand upon his intelligence. His infirmity is not so remarkable in ordinary society as to render it a subject of general observation. He is very subject to gusts of passion, which, nevertheless, are as easily appeased as they are excited."

In the first degree of stupidity, the individual is only incapable of deciding and judging, when it is necessary to weigh opposing motives. Then he feels his incapacity, and resorts to the intelligence of others.

While it is impossible to fully define any particular grade of mental deficiency, this is, perhaps, as close an approximation of Cronenbold's natural mental state as could be given. He brought with him but little knowledge of Europe, except the names of some of the cities he visited, and the hotels he stopped at. While in Europe, his attention was principally absorbed in finding lodgings and meals for the least money, the cheapest cigars, and the cheapest class of wine, though he was often swindled, without knowing it, by the waiters and the hackmen in making change.

As we have seen he "had learned to read, write and count, and made some progress in music." Ray would have described him in the following language."

"He could engage in certain occupations, and had managed in a manner to take care of his property and himself, though largely indebted to the advice and assistance of

others. He was one of those imbeciles, who talk but little, answer questions correctly, provided they are not without the circle of their customary habits and thoughts, and are not required to follow a conversation. He is particularly deficient in forethought, and in strong and durable affections, and 'labors under an uneasiness and restlessness of disposition, that unsuits him for steady employment. They are thus easily induced by bad men to assist in the execution of their criminal enterprises.' * * * *

"It is also worthy of notice, that the same physical imperfections, and a tendency to the same diseases, which accompany idiocy, are generally observed; though in a less degree to accompany imbecility."*

There were other features about this case which the expert can appreciate, but can not well describe—peculiarities of expression, manner, movements and attitude which mark the case as one, both of imbecility and mental disease. These cases often present "outer proofs," of a morbid or congenitally deficient, "understanding which can hardly be depicted to the inexperienced," (Dr. Tyler.) "The power of the expert in this regard is not capable of being transferred to another mind, but must die with its possessor." * * "All profound and grave maladies have their specific physiognomy, more or less clear and capable of being described, some of them are fully clear and pathognomonic, like the odor of cancer, or the face of phthisis. Insanity has its own delicate characteristics of face, eye, manner, reasoning, feeling, which can be read by the expert, but which are not appreciable to the casual observer," (Dr. Bell.)

The following is the joint conclusion arrived at by the commission of experts.

To the Hon. Wilson Primm, Judge of the St. Louis Criminal Court:

We, the undersigned commission of medical experts appointed by your Honor to inquire into the mental condition of Benj. F. Cronenbold, respectfully report:

That we find the said Cronenbold in a condition of mind such as to incapacitate him for appreciating his situation as one accused of crime; that he is *non compos mentis*, and we are of opinion that this condition will be a permanent one.

*Ray, p. 85.

We severally append our reasons for arriving at this conclusion, which statements we desire to have considered a part of this report.

CHAS. W. STEVENS, Chairman,
C. H. HUGHES,
J. K. BAUDUY,
WM. B. HAZARD,
GEO. J. ENGLEMAN.

Subjoined, also, are the individual opinions, *in extenso*, of the members of the commission, revealing more of the history of this case than we have given. It was fortunate that the court accepted the joint opinion as to the prisoner's mental impairment without scrutinizing closely the irreconcilable discrepancies in the several opinions, opinions which, if subjected to rigid examination, by an acute prosecuting attorney, assisted by a skillful expert, might have led to the impression upon the minds of a jury, that the medical gentlemen, composing the commission, did not themselves comprehend the prisoner's real mental *status*, juries not being aware of the facility with which the abstract fact of mental unsoundness may be justly arrived at, while the greatest difficulty often attends the determination of the precise nature of the cerebral lesion, and the consequent form and degree of mental impairment..

The facts here noted suggest the propriety in all these cases, where it is practicable, of the experts agreeing to a joint report, setting forth the simple fact of mental unsoundness, with as little scientific amplification and specification as may be sufficient to subserve the ends of scientific truth and justice. For even learned judges, far above the average juryman in intelligence, are apt to think that men who profess to comprehend the complex subject of unsoundness of mind should be able, with entire unanimity, to determine the precise form and degree of mental impairment.

In the case of Cronenbold, though he appears in a state bordering upon fatuity or advanced dementia, there still remain the impress of the forced culture he received in his youth, and his memory, though it reproduces, in an automatic manner, a limited number of facts and dates connected with his trip to Europe, and the homicide, is in fact, much impaired.

SEPARATE OPINIONS OF EXPERTS—DR. STEVENS' OPINION.

ST. LOUIS, MO., October 1, 1874.

To the Hon. Wilson Primm, Judge of the St. Louis County Criminal Court.

Sir: Having had personal acquaintance with Benjamin F. Cronenbold, for a period of about five years, and having examined him many times during his confinement in jail, and having, with other members of your commission carefully examined reliable witnesses, several of whom have known him for a long time, I find but little difficulty in forming an opinion in regard to his present mental condition. Almost from childhood he has been regarded as weak in mind. This, however, became more apparent as he approached manhood; the condition then attracted the attention of his acquaintances and friends in general; and mental incapacity was manifested beyond question, as he attempted to transact business, or to take part in the amenities of social life. About five years since, his father mentioned the case to me, desiring me to make observation from time to time, with a view to determining, if possible, the precise nature of the deficiency or imperfection. At length, I was convinced that he was imbecile in mind, and further, from some of his peculiarities and habits, I believed him in danger of falling into some form of insanity. For the last three years, he has been by regular gradations verging into dementia; the change since the homicide has been very rapid; at times he has had delusions.

I am, therefore, decidedly of the opinion that the prisoner is now laboring under the form of insanity, designated dementia, and that he does not and can not judge correctly or intelligently of his present surroundings or of his responsibilities.

Very Respectfully,
CHAS. W. STEVENS.

DR. ENGLEMAN'S OPINION.

Having attended the accused, Benjamin F. Cronenbold, professionally, upon his return from Europe in 1873, and during the entire period of his confinement in the county

jail, I have, by continued personal observation, been forced to the following conclusion.

1. That the said Benjamin F. Cronenbold, upon his return to the city in September, 1873, was in a state bordering upon mania, as proven by his irrational actions, insomnia and occasional delusions.

2. That for a few weeks after the homicide, in December, 1873, and January, 1874, his condition was one of absolute mental and physical prostration, torpor of mind, associated with a totally exhausted and debilitated state of the vital and nerve force.

3. That he has now fully recovered his physical powers, his memory being but slightly impaired. His reasoning faculties, however, are seriously affected, and very defective in intensity. His mind is in a more advanced state of imbecility, verging upon dementia. He is incompetent to arrive at any but the simplest conclusions, as evinced by incoherency of thought and language.

From these premises I must regard him to be totally unable to understand and appreciate his present situation, and unfit to be brought to trial. This opinion, based upon personal examination and observation, has been corroborated and strengthened by examination of the witnesses summoned before your commission.

Respectfully submitted,
GEO. J. ENGLEMAN.

DR. HAZARD'S OPINION.

YOUR HONOR:—The undersigned, commissioned by an order of Your Honor's court, of the date of 29th September, 1874, to examine into the mental condition of Benjamin F. Cronenbold, indicted for murder, hereby submits his individual report, supplementary to the joint report of the experts to which this is attached.

Having personally examined the accused on three occasions, twice in company with other experts, once alone; and having heard the sworn testimony of seven witnesses, the following facts have been ascertained to the satisfaction of the writer, and the succeeding conclusions drawn therefrom.

The aunt, grand-aunt and grandmother of the accused, all on the maternal side, were affected with some form of mental derangement.

As far back as it was possible to reach in the history of the accused, he was considered weak minded, foolish, or imbecile by his father, friends and acquaintances. This mental deficiency was so strongly marked that he was not considered capable of managing, or of being trusted to transact any kind of business, by those who knew him best.

He was sent to Europe to avoid what was considered an undesirable marriage, and while abroad, upon his return, and for many months thereafter, presented unmistakable symptoms of insanity, superadded to his former well-marked imbecility. This insanity was marked by alternating periods of mental exaltation and depression; the former evinced by extraordinary opinion of his own grandeur and dignity, and by persistent insomnia, restlessness and ideas of being engaged in business when he had none; the latter condition accompanied by suspicion, distrust of all those about him, and later, by well-defined delusions that he had been poisoned, and that there was a conspiracy to again poison him. The fact of general mental alienation was shown conclusively by a total change in his personal habits as regarded dress, personal cleanliness and choice of food, this change occurring, not at any period of life when natural changes of development or decay occur, but following the unaccustomed excitement of travel, and the care and anxiety occasioned by absence from home and the charge of his own welfare, to which he had never before been accustomed. This form of intellectual insanity is termed *La folie circulaire*, or *La folie a double forme* by the French writers. It was during one of these periods of excitation that the homicide was committed. The period of depression which followed was of the most extreme character; so great was this depression that life itself seemed almost extinguished.

During the months of confinement in prison, the quietude of his daily life, the lack of all excitement, the care and attention of learned physicians, and a system of diet and exercise suited to his condition, his mental condition

has become nearly, if not quite, the same as that preceding his voyage to Europe. On simple subjects requiring no exercise of the reflective faculties, he can return very pertinent answers to direct questions. Where any except the least complex operations of the mind are concerned, he can answer only at random, or does not answer at all.

He never takes the initiative in conversation. His memory of simple matters seems to be good. He does not appear to have any real understanding of the enormity of his offense against human or divine law.

CONCLUSIONS.

1. He is *non compos mentis*. His brain, the organ of thought, is not developed to the usual standard. His condition before his voyage, and at the present time, is best described by the term imbecility.

2. While in Europe, and for four or five months after his return, there was superadded to his normal or ordinary condition of imbecility, an acute attack of insanity.

3. At the present time he is imbecile to the extent above indicated, with the probability of a return of insanity of an extremely dangerous character if there is at any time presented any strong exciting cause.

4. He is now unfit for trial.

Respectfully submitted,

WM. B. HAZARD, M. D.

DR. J. K. BAUDUY'S OPINION.

After a most thorough examination of the previous history, and after a careful personal scrutiny of Benjamin Cronenbold, and after an analytical study of the evidence of many sworn witnesses, I am convinced of his imbecility for the following reasons: Strong hereditary predisposition to insanity exists on the maternal side, of which the defendant's arrested mental development was the outcropping, exposing him to the worst of all tyrannies, which, in his case, is an organization mentally and morally defective. The utmost unanimity existed amongst witnesses, both relatives and others who were mere acquaintances, therefore entirely disinterested, that as far as investigation

could pry into the days of the prisoner's early boyhood the same mental weakness was evinced. In the opinion of the boy's father, who had endeavored to give him a liberal education, this misfortune and mortification had been realized and fully appreciated; and by all observers he was considered incapacitated from either taking care of himself, or transacting business of the simplest nature, with which a child of the average understanding could have been entrusted. Whilst in Europe, during the homeward journey, and immediately after his arrival, well-defined delusions of suspicion, distrust, fear of being poisoned, and an impression that conspiracies were being formed, of which he was the victim, manifested themselves, and pointed to the fact that some more acute form of insanity had been superadded to his previous mental deficiency. The confirmation of this opinion, consists in a marked alteration of character, changing his habits, feelings, manners and dress. He evinced about this time the most singular, extraordinary behavior; his actions were discordant, his mind wandering, and all the intellectual manifestations thereof were more or less perverted.

Moods of great depression, alternating with those of excitement, and during the latter, ideas of grandeur and self-importance, were of peculiar significance, and must strike very forcibly, all conversant with psychological inquiry and study. Apathy and aversion to friends and relatives, constituted another link which makes the chain of evidence more complete, especially as all of these symptoms of mental aberration were exciting attention, long prior to the homicide.

About this time he was examined by Dr. Engleman, his family attendant, who found all the well-marked physical symptoms of insanity, obstinate insomnia, constipation, nervousness, etc.

It is worthy of remark in this connection, that two medical men, one of whom met him in Europe, considered him insane, and the other, his physician in St. Louis, had actually recommended that he should be sent to a lunatic asylum.

A feature of this case, to which I attach great importance, is that during a prison-life of many months, although watched night and day, and oftentimes when prisoner and his visitors were unaware of the presence of others, the same stupidity, stolidity, apathy and want of appreciation of his surroundings and condition pervaded his whole conduct. His replies were monosyllabic, his gaze vacant, laugh frequent, but always silly and meaningless. His friends and attorneys could not arouse him from this lethargy, and the latter have up to the present moment never been able to gain his confidence or obtain a solitary statement from his lips in connection with his case. When urged to talk, he would second their endeavors by utter incoherence and an idiotic laugh. All the salient features of this picture when assembled into a group, confirm our belief of the boy's fatuity, and give us every assurance that he is in a state bordering upon complete amentia.

DR. HUGHES' OPINION.

The conclusion of the undersigned, respecting the mental condition of Mr. Benjamin Cronenbold, is the result of frequent and careful personal examinations of the prisoner, during the months of June, July, August and September, preceding the receipt of your commission, and of one interview since.

The conclusion of imbecility was arrived at early last spring, by all the gentlemen composing the present commission, who then examined said Cronenbold, at the request of his attorneys.

Cranial measurement also seemed to strengthen the conclusion of imbecility. Whilst it is true that many weak-minded persons appear to be well formed in brain and body, it is also true that idiots and imbeciles usually have either abnormally small, large or deformed heads. By imbecility is meant arrested development of brain and consequent weakness of mind, more or less complete, according to the period at which development ceases. Almost every degree of imperfect development of brain and mind, may exist "down to actual incapacity to develop at all."

The degree of imbecility in this case, as I recognize it, from Cronenbold's life history, and personal observation, may be found fully described in Hoffbauer's first degree, reproduced in Ray's *Jurisprudence of Insanity*, fourth edition, page 88, which, for the sake of brevity, I here omit.

The history of Cronenbold's ancestry, especially his mother's mother, aunt and sister—they having all been at one time or another, manifestly of unsound mind—would lead us to suspect that he possesses a "native constitution of nervous element, which is defective and unstable," even if his present mental condition were not sufficient to convince one of this fact. The natural weakness of Cronenbold's mind, has been aggravated by disease, involving the brain and nervous system. He appears to have undergone a decided change, to be in a mental state different from his former natural weakness of mind, which I can characterize by no other term than that of dementia. Here too, as in imbecility "we meet with every degree of mental decay in different cases."

"Dementia is the natural termination of mental degeneration, whether going on in the individual or through generations." In this sense I use the term dementia, and consider that he is at present suffering from this diseased condition of the brain. That he had profound disease of the brain and nervous system, is established by the testimony of the Doctors, Engleman after the homicide, and there are evidences of delusions before. The paralyzed condition of the bladder and bowels, the sleeplessness for so long a time, the marked prostration immediately after the killing, confining him for weeks to his bed, and requiring for him constant medical attention, and endangering his life in the estimation of his then attending physicians, the change in his natural habits, and the delusions, which, at times, possessed and dominated his weak mind, all confirm this conclusion.

The sworn testimony of all witnesses, without exception, who appeared before the commission, was confirmatory of the opinion here expressed. The present increased feebleness of mind from disease, in his case, may pass off

and leave him in the imbecile state of mind natural to him, and from which he can never escape, or it may be more or less apparent for the rest of his life. In the latter case, recurring attacks of acute insanity are apt to come on—should he recover from his present acute dementia—only to issue finally, in complete and incurable dementia, or total loss of all mind.

C. H. HUGHES.

After hearing the reports, the presiding judge obtained the written opinion of Circuit Attorney J. C. Normile, that the accused might be bailed for the purpose of sending him to an asylum, and fixed the bond at \$20,000. Cronenbold was sent to the Missouri State Lunatic Asylum, at Fulton, Mo., and the Superintendent was required to file a monthly report of the prisoner's mental condition, so that in the event of his recovering his mental health, he may still be tried on the indictment standing against him.

Thus ends this important case. The ends of justice have been met, society is protected against an unsafe member, and humanity has not been outraged by a judicial murder of the mentally maimed, whom the hand of charity conducts to the hospital, rather than the gallows, or the jail.

ADDENDUM.

The sequel of this patient's life record at the Missouri State Lunatic Asylum, fully justified the verdict. He was discharged from the asylum unimproved, August 16th, 1892.

An important legal feature in this case, consisted in the fact that the uncle who passionately suggested the killing by saying at the table, "Benny, if I were you I would go and kill the ———," was never put on trial, though it was suggested by eminent legal opinion, that he was legally liable as accessory before the fact, or as *particeps criminis*, the boy having gone immediately on receiving this advice and committed the murder.

The escape of the uncle from trial having been secured by the fact that Cronenbold was never brought to final trial.

This case might be characterized murder by suggestion. The suggestion was admitted by the suggestor, though not in the evidence and declared by the boy. The deed was done by him, he said, because he had been told to do it. The case is one of progressive mental failure engrafted upon imbecility—to inherent defect of brain is added the delusional distortion of mental disease.

The medical points of interest center upon the unanimous medical verdict of imbecility, with somewhat varying views of the condition resulting from the engrafted mental disease. The medical expert opinions, though divergent, were yet harmonious on the main matter for the Law, and this should be the aim of all medical evidence in matters of psychiatry before courts of justice.

A CASE OF BILATERAL ATHETOSIS WITH SOME UNUSUAL SYMPTOMS.

By GIVEN CAMPBELL, M. D.,

St. Louis, Mo.

DOUBLE Athetosis being a condition but rarely encountered, and the present case presenting some unusual accompaniments, it was thought that a report of this case might aid in elucidating its pathology, and that a consideration of some of the points in which this case differs from any thus far reported might throw some light on the causes leading to this but little understood syndrome. The following is a report of the case as copied from the record made by myself in the neurological department of the St. Louis Polyclinic (Mo. Medical College): W. H., male, Aet, 2½ years, came of healthy German parentage. Two other children in family, girls, aged 14 and 16, both healthy.

Patient was born at the seventh month of gestation. No unusual incidents during pregnancy but mother says labor was difficult.

Since birth patient has been rather delicate, and did not thrive well. No paralytic or convulsive seizures. Patient was never breast fed. Was nourished by cow's milk diluted with water. From earliest infancy mother noticed peculiar movements of neck muscles and of the hands and arms. These movements were always absent in sleep and have continued with but little change to the present time. For the last two months similar movements have been noticed in the face. Patient has never had any serious illness or any distinct history of anything resembling an acute infectious disease. Patient does not walk. At

two years he began to say a few words, but talking has progressed slowly. Present condition: Aspect rather delicate; height, 30 inches; weight, 19 pounds; slightly anaemic (blood spg. 1052); appetite fairly good; bowels irregular. No signs of paralysis of any cranial nerve. The upper and lower limbs and neck muscles are in constant motion. This motion varies greatly in intensity, and is much increased by emotional excitement or the attempt to perform a voluntary act. Movements are most energetic in the hands, and are much more noticeable in the upper than in the lower extremities. In nature the movement is a slow, almost vermicular contraction, and while equally present in the two sides of the body, has not a common rythm. Thus, while the left hand may be flexed the right hand will be extended. The chief movements present in the upper limbs are flexion, with strong pronation of wrist and rotation inward, and flexion of arm with extension of some fingers while others of that hand will be strongly flexed. At other times the fingers will be all strongly extended, and some will be abducted and others adducted. The movements of the hand have produced a slight subluxation of the phalanges. In the lower limb, movements are slighter and consist of adduction and abduction of the ankle, with alternate flexion and extension of the toes in which the great toe acts independently of the others, and is often abducted and extended when the other toes are flexed, while occasionally the great toe will be flexed at its metatarso phalangeal joint and adducted to median line of body while the other toes will be extended and abducted from the median line of body.

In the neck, the movements consist of alternate contraction of the lateral cervical muscles with but slight tendency to tonic spasm but with transient weakness, during which patient cannot hold the head upright.

The facial movements are in the *orbicularis oris* and the *levatores menti* and the levators of the upper lip. Physical examination fails to reveal any disease of the abdominal or thoracic viscera. Eyes show nothing abnormal. Tongue does not seem to be involved. No signs of sensory impairment anywhere.

Urine normal in color and is free from albumen, sugar or abnormal solid constituents; no evidence of cystitis.

Knee jerks increased, chiefly on left side where contractures are distinctly present; less plainly so on right side; ankle clonus not present. Intelligence: Child says a few words, calls his particular favorites by name, asks for water and milk. Is pleased with new clothes, and mother thinks he is as intelligent as her other children were at his age. I am inclined to think this opinion is due to the mother's love obscuring her ability to see her child as others see him. However, the mental impairment is not great.

For a number of months patient has had a nervous in-



vovement of the bladder. This seems to consist in a spasmotic contraction of the constrictor fibers at the neck, which prevents voiding of urine for some time, often for fifteen minutes. The child will cry, and strain with abdominal muscles, and no urine will pass for some time, and then the spasm will relax and a full stream will flow, and fifty to one hundred and fifty cubic centimeters of a not unusually pale urine will be voided.

Patient also has been subject since birth to severe sweats. These occur at night, are very profuse, and seem colliquative. And there seems to be no toxic agency at work that would account for them. These sweats are more

plainly of purely nervous origin than any of which I can find a record. In one of Audry's cases* he speaks of the patient sweating profusely when under emotional excitement, but mentions that the movements are increased at this time, and doubts how much the increased muscular play has to do with the sweating. He inclines, however, to the belief that the emotional excitement plays a part.

Leube reports a case: Face uniformly red, with profuse sweating of head and neck on very slight exertion. Brousse:† During the movements the sweat comes in beads on the forehead. These are the only recorded cases that I could find in which sweating is distinctly mentioned as a part of the symptom complex, and the nature of the phenomenon in my case would seem to point more directly to the nervous system as a sole cause than do any of the others reported.

While incontinence of urine and faeces has been reported in several cases in which great mental impairment was an accompaniment and probably the cause, I can find but one other case in which the functions of the bladder are involved and the mental condition such that a true incontinence of urine could be inferred. This is a girl of 8 years in whom Adsersen‡ reports: Occasional attacks of incontinence of urine, nocturnal and even diurnal. Incontinence of faeces infrequent. In no case can I find this transient spasmodic retention above alluded to.

Such of my readers as have access to the back numbers of the ALIENIST AND NEUROLOGIST will find in Vol. VIII, No. 3, a very interesting case of this condition presented by Dr. C. H. Hughes.

*Obs. vi L. Athetose Double.

†Obs. LXVIII.—Brousse. (*Un nouveau cas d'athetose double.*—*Gaz. h²bd. des sc. med. de Montp.*, 1er sept. 1888.—Obs. très résumée.

‡Obs. LX.—Adsersen. (*Bildrag til Kasuistiken af den "doppelte Atetose".*—*Hospitals-Tidende; 3de Række IV*, No 49, 1886.)—Observation résumée d'après une obligeante traduction de M. Friedenreich et le texte de MM. Blocq et Blin (*Revue de Méd.*).

SYPHILIS AND INSANITY.

By DR. EDOARDO COLLOTTI.*

THE study of the influence of syphilis on the nervous system has become a fruitful field of investigation and of controversy only in the last forty years—from the works especially of Charcot, Fournier, Murri, Huebner, Wunderlich, Erb, Eulenberg, Rumpf, and others.

Nothing is found in Tracastro,¹ who notes the nervous alterations to which the syphilitic are subject, nor in Ulric von Hutten² who, in describing the paralyses by which the syphilitic are attacked, observes that they may owe their origin to the general infection, but attributes them, as a rule, to the treatment employed—a hypothesis, for that matter, which we find repeated many years afterwards by Gros and Lanceraux, and to a certain extent also by Julien, but which, since the researches of Kussmaul on mercurialism, has been absolutely rejected.

An observation on the relation between syphilis and the nervous system was made by Nicola Leoniceno, the first, who wrote on the *morbus syphiliticus* in a work published in 1494 in Italy—where he speaks of “vapours of the brain” to which syphilitics are liable, an observation, as may be imagined, sufficiently vague, nebulous and unsatisfactory.

The first descriptions of a syphilitic gumma of the brain were given by Ballonius³ in 1600, then by Morgagni in 1700, and in the observations made by Beccari in his work called *amplissimum interioris medicae doctrinae thesaurus*⁴ we find the first notice of nerve diseases, epilepsy and neuralgias due to syphilis.

* Translated from *Il Pisani* (Palermo) Sept.-Dec., 1898, by Susanna P. Boyle, M. D., Hospital for the Insane, Independence, Iowa.

In 1740 Astruc⁵ devoted an entire chapter in his classic work, to syphilitic diseases of the nervous system, and from this dates the controversy which has since been waged on this important subject.

Then came Carrère and many others, for and against the ideas set forth by Astruc, and among these the most important of them all was the potent voice of Hunter.

But, as happens very often where a scientific innovation is in question, the subject of dispute was, by some, generalized too much, and by others denied entirely; thus, while Hunter,⁶ for example asserted that he had never found anything in syphilitic brains, Carrére⁷ ascribed all chronic cerebral diseases to syphilis, and while Esquirol and Jacobi considered syphilis as one of the most important and most common etiological factors in the production of mental disturbances, Guislain, on the contrary, considered it as a rare cause.

It was in the first year of the present century, and especially by French writers, that the subject of syphilis of the brain was presented on really scientific grounds, this being due to the fact that their knowledge was based on anatomical investigations, and the works of Lallemand,⁸ Rayere,⁹ and Ricord¹⁰ in France; of Schutzemberger, and his school, in Germany, and last, but not least, the anatomical researches of Virchow in 1858, inaugurated a new era in the syphilis of the nervous system.

Thus, little by little, studying the relations between syphilis and the cerebral substance, between it and the cerebral arteries, between it and the spinal cord and the peripheral nerves, attention was called to the fact that syphilis could give rise to manifestations and disorders of the psychic functions; so that from Ekrard¹¹ in 1843, Knoor¹² in 1849, Leon Gros, Lanceraux,¹³ Zambaco¹⁴ in 1861 and 1862, and especially from Jaksch, we gained an exact knowledge of the convulsive attacks, neuralgias and paralyses to which syphilis may give rise.

Medical alienists, following in the wake of pathological anatomy, clinical knowledge and practice, all of which contribute their quota to prove that the importance of the part

played by syphilis in affections of the brain and cord, have mastered this subject only within the last few years. Among those deserving mention in this field, as they were among the first, are Jensen, Meyer, Westphal, Leedesdorf and Griesinger.

And then the simple question of the relation of syphilis to diseases of the nervous system, gradually became specialized, and it was studied in its connections with disturbances of general sensibility (cephalalgia, gastralgia, rheumatoid pains); disturbance of the special senses (at first those of sight and hearing); motor disturbances (general epileptic convulsions, partial epilepsy, vertigo, habitual sub-vertiginous condition of Fournier, paralysis—especially of the motor oculi, which Ricord believes to be an almost certain sign of syphilis, and which Fournier says is due to this disease in 75 per cent. of the cases—facial paralysis, paraplegia, monoplegia, and, more frequently, hemiplegia, contractures, etc.); and, finally, aphasias, which are one of the first and most frequent manifestations of cerebral syphilis.

And, in the domain of pathological anatomy, there were studied gummatæ of the meninges and brain, syphilitic scleroses, medullary and meningeal, and, lastly, arteritis, both the obliterating variety and that leading to aneurismal dilatations.

This last subject especially—that of syphilitic arteritis, has been the most disputed, and, I believe, the best studied of any.

The action of syphilis on the nervous system did not, it is true, escape the ancient authors; it was, if not affirmed at least noted by Lancisi,¹⁶ Morgagni,¹⁶ Astruc,¹⁷ and others; but it was only after 1854 that there appeared the first and most concrete communication on syphilitic affections of the cerebral arteries—communicated by Detrick, Gilde-meester and Hoyach, Valdemar, Steemberg, Esmarck, Wilks, Moxon, Broadbent, Russel, Hughlings Jackson and others.¹⁸

The most important works on this subject have been those of Heubner,¹⁹ followed by Gerhardt, Litten, Koester, Friedlaender, Baumgarten and Lanceraux,²⁰ as well as those

of Rumpf, Sharkey, Geffrier, Mauriac, Schmidt, Joffroy and Letienne.²¹

In the actual state of our knowledge, the principal question to be decided is that of the post to be assigned to syphilis in the etiology of mental diseases.

It is not our intention to attempt a complete discussion of the subject, and we shall, therefore, confine ourselves to noting, in passing, the various forms of insanity which may owe their origin to syphilitic infection, dwelling a little longer on the two problems most disputed during the past few years and as yet undecided.

Can syphilis give rise to general paralysis? Can it cause a simple insanity?

Both these questions have been studied by Fournier, who, publishing in 1879 his lectures on syphilis of the brain, answered the second in the affirmative, the first in the negative, assigning the name of *pseudo-progressive paralysis* to that collection of disturbances met with, which so strongly resemble those present in general paralysis of the insane.

Leaving aside, for the moment, the second of these questions, which, however, will form the principal object of our observations, and to which we hope to make a modest contribution, we shall note briefly the most important of the literature bearing on syphilis in its relation to general paralysis, and we shall group the different views, into three distinct theories.

First. Some authorities admit that syphilis can give rise to general paralysis. Esmarck, Jessen, Kyelberg, and others, consider that progressive paralysis is either always of syphilitic origin, or, at least, that it never develops in individuals immune from hereditary or acquired lues. Coffin, Obstainer, and others, limit themselves to saying that if not all at least the majority of paralytics, from twenty-five to thirty-five years of age, owe their condition to this infection. Thus, Mendel, in one hundred and eighteen cases of progressive paralysis, found ninety of them syphilitic.

Second. Other alienists deny absolutely the possibility of syphilis being the cause of general paralysis, admitting

only a coincidence between the diseases. This is the view of Schüle, Voisin, Michale, Toville, and others, who observe that paralysis is due to essentially diffuse lesions of the cerebrum, while the lesions characteristic of syphilis are localized and circumscribed, and they quote cases in which, with coexisting ordinary tertiary symptoms such as iritis, exostoses, and gummatæ, energetic anti-syphilitic treatment has made these disappear, while it has exerted no beneficial influence whatever on the course of the progressive paralysis.

Third. As a medium between these two extreme theories, we find a third whose advocate is Professor Fournier who considers that syphilis does not give rise to true progressive paralysis but to a form resembling this, though differing from it in symptomatic characteristics, in course, duration, termination and anatomical alterations; to which Fournier proposes to give the name of *pseudo-general paralysis*, and Mairet²² wishes to designate as generalized syphilitic paralysis, and Lasègue as *stati-paralysoides*.

In these last few years another theory has been ventilated which would appear to be a kind of concession, viz: that syphilis may cause not only the pseudo-general paralysis of Fournier, but also true general paralysis. Morel Lavallée, a supporter of this hypothesis, I believe in 1889, reports two cases of no small clinical value in this respect.

Also Platonnow²³ lately writing on the question of *general progressive paralysis and its treatment in the insane*, reports a case of true progressive paralysis due to syphilis, the course of which was arrested in its acute stage by energetic anti-syphilitic treatment, differentiating clearly this case from those of pseudo-progressive paralysis of Fournier and Kowalewsky.

All these theories have as their supporters and adversaries, the most celebrated and reputable clinicians, alienists and syphilographers. From what we shall quote it will be seen how unlike though authoritative are the judgments formed by different authors on the subject.

Confirming the primary importance of syphilis in the etiology of progressive paralysis, we have Esmark, Jessen, Rieger,²⁴ Obersteiner,²⁵ Dietz, Abeke and Tegger,²⁶ Kraep-

elin in his work on Psychiatry, Mendel, Kielberg, Shoenberg, Rohmell,²⁷ Hughes and Savage,²⁵ Regis,²⁸ Cullere, Hildenbrand, Cuylitis, McDonald, Ebrard, Charbonnand, Anglade, Raymond,³⁰ Bonnet, Tamburini, and others.

Those denying primary importance to syphilis are Parant, Bouilland, Voisin,³¹ Talon, Christian,³² Fanaioli, Wille, Livi,³³ Frigeno, Toville, Westphal, Fürstner, Magnan,³⁴ Eickolt, Spitzka, Nichols, Hurd,³⁵ Reynier, Dubuisson,³⁶ and others.

Snell³⁷ in twenty cases of general paralysis found eleven cases of syphilis, and says that a causal relation between the two cannot be denied.

Kiernan³⁸ admits that syphilis plays a large part in the etiology of general paralysis; he believes, however, that clinically, therapeutically, and pathologically, progressive paralysis of a syphilitic origin may be distinguished from that which is non-syphilitic.

Reinhard³⁹ in a *contribution to the etiology of general progressive paralysis of the insane with special regard to the influence of syphilis*, concludes that this infection and alcohol are the most important factors in the etiology.

Nasse,⁴⁰ basing his remarks on observation of seven cases, can not admit any relation between paralysis and syphilis.

Zelliatrie⁴¹ in forty women affected with general paralysis, found twenty-two syphilitics, that is 55 per cent., and concludes that syphilis is a very frequent etiological factor in paralysis, especially in women.

Finally, Nicoulan,⁴² on the other hand, has studied one hundred and twenty-eight paralytics, and considers syphilis amongst the rarest of its causes.

In connection with progressive paralysis, we must note here *tabes dorsalis*.

Erb was the first to establish in systematic form and to denominate *syphilitic spinal paralysis*, the alterations described by Charcot under the name of *syphilitic transverse myelitis*.

P. Kowalewsky⁴³ also admits a syphilitic spinal paralysis, and believes it frequent, but less so than *tabes*.

Fournier⁴⁴ in his *Lecons sur la periode preatassique du*

tabes d'origine syphilitique, confirms the existence of this form of disease.

He believes *tabes dorsalis* in the great majority of cases to be produced by syphilis, this not acting as a direct cause, but only in-as-much as it predisposes to sclerosis of the posterior columns; sclerosis being established, syphilis is no longer a factor, and anti-syphilitic treatment is useless. Gummata, however, may give rise to symptoms analogous to those of *tabes*, designated *pseudo-tabes*, and these respond to treatment.

It is, as will be seen, an analogous principle to that which gives the denomination of pseudo- progressive paralysis, being no other than the *tabes of the cerebrum* described by Strümpell.

L. Minor,⁴⁵ basing his judgment on a quantity of minute statistical data of syphilis, tabes and progressive paralysis in Russians and Jews, comes to the conclusion that in the majority of cases of tabes there is a progressive syphilitic infection, and that the frequency of tabes in a race is in direct relation to the frequency of syphilis.

Brasch⁴⁶ had described "a case of syphilis of the central nervous system, running a course of tabetic paralysis, characterized by somnolence, disorientation, amnesia, confused speech, disconnected acts and considerable diminution of the intelligence."

In one hundred ataxic cases Beyer found twenty syphilitics; Eulenberg, twenty-five; Remak, twenty-three; Bernhardt, forty-six; Erb, fifty; Strümpell, sixty; Rumpf, eighty; Möbius, eighty; Voight, eighty-one; and Fournier, ninety-three. Prof. Profeta⁴⁷ furnishes a contribution of fifteen observations on syphilitic cases, and many cases were presented by Benedict, Gowers, and others, at the Neurological Congress in New York in 1884; Desplats reports a case of cure.

In spite of these data, as in progressive paralysis, some clinicians deny the syphilitic origin of spinal ataxia, or find merely a coincidence of the two conditions. Amongst these are Charent, Oppenheim, Lewin, Nothnagel, and others.

Others still, among them being Bianchi and Eulenberg, believe that syphilis only predisposes to ataxia, as to general paralysis.

As we have already noted, that syphilis may give rise to convulsions has been known for many years.

Besides the observations of Morgagni, and others, on which we have briefly touched, many authors have reported true epileptic seizures due to syphilis.

Ljunggren⁴⁸ has reported one case; Profeta,⁴⁹ four; and others, Franck, Maisonneuve, Chuster, Mairet and Guido Guidi, admit its existence and discuss its characteristic symptoms, mode of attack, special course, age at development, anatomical alterations, etc.

Cases worthy of note as occurring, not in the tertiary but in the early secondary stages, have been reported by Ambrosoli, Diday, Broadbent and Fournier.

Mauriac, Larrey, Zambaco, Rayer, Simon, Gowers, Charcot, Bourceret, Cossy, Levi, Pellizzari, and many others, maintain that syphilitic epilepsy is always due to specific lesions of the brain or its envelopes.

Basing his judgment on these observations, Hughlings Jackson,⁵⁰ in a work published twenty years ago, considers that it is not scientifically exact to designate as syphilitic certain symptoms which depend on lesions, probably syphilitic, of the brain or meninges. He does not admit any difference between the effects produced by a syphiloma and those engendered by any other neoplasm such as, for instance, glioma; and that, therefore, to speak of syphilitic epilepsy is as inconvenient as it would be, for instance, to speak of gliomatous epilepsy.

But Fournier⁵¹ lately, maintaining his faith in the existence of syphilitic epilepsy as an epileptic form of cerebral syphilis founded on anatomical alterations, illustrates another form of epilepsy which he has verified in the course of the secondary symptoms, and as to the nature of which there can be no doubt, both from the constant and certain preceding signs, the advanced age at which it appears and the absence of any other cause. He maintains that this form should be regarded not only as the result of organic

lesions, but as the product of dynamic disturbances, resembling those lesions lately designated para-syphilitic, and distinguishing it, therefore, as para-syphilitic epilepsy.

Very recently Professor Rubino, in the April number of the *Ufficiale Sanitario*, reports two interesting clinical observations on a true case of syphilitic epilepsy in the secondary stage, "where this could only be due either to superficial and curable lesions or to the direct action of the virus on the epileptogenous centres, particularly but not exclusively in an individual predisposed to neuropathies."

As complementary to what we have said on epilepsy, we shall note here Jacksonian epilepsy, which Jackson himself believes to be caused by syphilitic neoplasms of the brain or its membranes. In accordance with this Broadbent regards, as a certain sign of cerebral syphiloma, convulsions without loss of consciousness, of the face, feet or hands, or what may be called *partial Jacksonian epilepsy*, or, as designated by Fritsch and Hitzig, *lesions of the motor centres*, this being, however, contradicted by Schiff.⁵²

Finally, we shall mention syphilitic chorea, admitted by Rollet, Séc, Casthiles, Allison, Franceschi, Tizzoni, and others, but denied by a large number of observers.

In hysteria, also, there has been evinced a desire to investigate the influence of syphilitic infection, but none of the authors, so far as I know, have described a special form of syphilitic hysteria.

According to Prof. Charcot⁵³ it may happen that hysteria, though perhaps latent, may manifest itself coincidently with an intoxication, traumatism or intercurrent malaria, and he refers to the case of a syphilitic man who presented symptoms attributed to syphilis, but which were really hysterical.

And Paul Raymond⁵⁴ reports a case of a young man who, up to the age of seventeen years, had hysterical manifestations; he having contracted syphilis when not more than seven years old. The infection awoke hysteria, which has been by some characterized as a psychic paralysis.

Bury⁵⁵ speaks of the influence of hereditary syphilis in producing idiocy, and refers to some cases of this due to

inherited syphilis reported by different authors besides Sisc, two with autopsies observed by himself, and remarks that syphilis is the cause of various nervous disturbances more frequently, indeed, than is generally admitted.

Cases of syphilitic dementia, cured or relieved by appropriate treatment, have been reported by Gailleton, Leidesdorf, Dreer, Erlenmeyer, Profeta,⁵⁶ and others.

The question of syphilitic neurosis is one much in dispute at the present time, and the opinions held are very discordant.

Wille, in 1872, published a work on syphilitic psychoses based on data obtained in the Rheinan hospital, in which syphilitic psychoses were rated at two per cent.

He affirms that besides seeing them in the tertiary stage, symptoms have been known to arise two months after infection, and even to be accompanied by syphilitic exanthemata and glandular hyperplasias.

Pirocchi, basing his statistics on Italian and foreign literature, estimates the frequency to be about fifteen per cent.

Ricord, Engelstedt, and others, report cases of syphilitic psychopathies not accompanied by anatomical lesions.

Zambaco narrates a case of intermittent syphilitic mania; Keyes has reported another; and a case of melancholia, recurring yearly has been reported by Lagneau.⁵⁷

Esmarck and Jessen describe a case of lipomania agitata, supervening in the tertiary stage, and cured by the mixed treatment. Gross has a case of melancholia cured by the iodides. Gailleton gives the history of a melancholiac with cephalalgia, and delirium with exacerbations at night, rapidly cured by iodide of potash. Steemberg and Simon found at the autopsy, syphilitic lesions of the cerebrum in two subjects, one with melancholia simplex and the other with lipomania attonita, and both ending in suicide. Linslow relates a history of an individual who contracted syphilis and who was attacked later by melancholia, then by mania; a case perfectly illustrating the description given by Wille of syphilitic psychoses.

Dr. Larcher reports a case of syphilitic mania cured, four months from the invasion, by anti-syphilitic remedies.

The classic and well-known case of Fournier, in which he describes a syphilitic mania which was cured and the cure was still perfect after four years, has been disputed by Mairet, who attributes the condition to pseudo-paralysis.

A case of early syphilitic psychosis has been published by Pieraccini,⁵⁸ originating forty days after the initial syphiloma—cured completely by specific remedies. He believes that there must be lesions of the superficies of the frontal lobes, and that the psychic phenomena must be attributed to vascular disturbances depending on these alterations in the pia mater.

Other cases of psycho-neuroses have been reported by Hillairet, Besnier, and finally by Benjamin Bell.

Opposed to these writers we have those who do not admit the existence of syphilitic psycho-neuroses.

Oebeké⁵⁹ has investigated in three hundred and twenty cases the part played by syphilis in the etiology, course and termination of mental diseases.

Of these three hundred and twenty, seventy had general paralysis, and two hundred and fifty other mental disturbances; syphilis could be counted an etiological factor in forty of the paralytics, and thirty-two of the other patients, but of these only fourteen were undoubtedly of syphilitic origin; in eighteen there was some uncertainty owing to the presence of other important causes. The thirty-two cases in question consisted of melancholics, paranoiacs, dementes, and epileptics. In only five of these was a complete cure effected.

Oebeké, however, has not found a syphilitic insanity, properly so-called—that is to say, a pathological condition presenting particular features and reacting to specific remedies⁶⁰—and he denies the existence of such a form.

Julius Mickle thinks that in the greater part of the cases, characterized as syphilitic psychoses, syphilis is probably not the real cause. He admits that the blood, modified by the syphilitic virus, may act on the brain, which in these cases is easily excited. He concludes, in this regard, that there is nothing special to distinguish an attack of mania,

arising in a paralytic, from that originating in a healthy person, and cites thirty-six cases in which insanity coexisted with syphilis without the autopsy revealing any syphilitic lesions.⁶¹

Mansurow, in his work on tertiary syphilis, published in 1877, has a chapter devoted to the psychoses following syphilis. He refers to the cases of syphilitic hypochondriasis; patients fearing terrible consequences from their disease; gives an exact picture of syphilo-phobia met with in those who fear that they have the disease and in reality have not; notes mercuro-phobia in syphilitics who will not have recourse to medical treatment for fear of being poisoned by mercury, and concludes that in none of these cases have we a true syphilitic psychopathy, but that they constitute a *psychic state* of sane people affected by syphilis, and independent entirely of actual lesions of the brain.

Seppilli, also, passing in review some of the works we have already noted, observes that it is not proper to claim as syphilitic neuroses, these disturbances arising in the early periods of the infection, because in these cases, even more powerful than the syphilitic virus, is the idea of having within his own body, the agent which is so powerful a factor in producing serious mental changes.

But he who has collected and co-ordinated all the objections to simple syphilitic insanity, is Mairet, from whose lectures we have already quoted.

According to this author, in all cases of syphilitic hypochondriacal lipomania the syphilitic infection produces the mental alienation, only indirectly, acting as a moral and not as a virulent or diathetic cause. He considers that the typical case of Zambaco, and the others described under the name of syphilitic mania, do not deserve such designation since, if syphilis caused the mental alienation, its action was indirect, the insanity being subordinate, not to the diathesis itself, but to one of its manifestations, viz., the intense cephalgia; and, finally, he regards Larcher's case which we have already cited, as merely one of coincident mania and syphilitic infection.

He disregards, in this case, the appearance of the mania only a few months after infection, its course, brief duration and complete cure in four months after energetic anti-syphilitic treatment. According to him *une herédité puissante* is present and this must be the only and sufficient cause to explain the development of mania without the intervention of syphilis — syphilis is merely a coincidence!

Excluding then, with Mairet, the cases of *syphilophobia*, those in which there is only a coincidence of the two diseases, and those in which the insanity is secondary to an intense cephalalgia, there still remain those other cases diagnosticated as simple functional insanity, and in which the connection between cause and effect would appear to be evident and irrefutable.

But in spite of this evidence, Mairet persists in his systematic negation. In these cases, he says, we have to deal with mental alienation from organic lesions; with symptomatic mania at their initial period.

“Mais c'est seulement au début que ces alienations mentales imitent ainsi la folie simple, bientôt en effet au délire s'ajoutent de la demence et des troubles paralytiques qui afferment leur nature organique.”

But where are the dementia and paralytic disturbances in the cases we have noted? And *when*, after what period of initiation, must these signs be added to the maniacal delirium? What significance, in other words, has the *bientôt* of Mairet?

In the three cases reported by him of K., G. and B. dementia and paralysis followed a primitive delirium, which presented itself with all the appearances of simple insanity, after two months in one case and four in the other.

“I have never met nor observed a case of syphilitic alienation which conducted itself like a simple insanity; *always*, and even at a period near to the first manifestations of delirium, at the end of four or five months, as in some of our patients, or at the end of some weeks as in Hillairet's case, the insanity assumes the form and type of an organic disease.”⁶⁴

Thus Mairet concludes his chapter on syphilis and simple insanity, but to his conclusions we cannot agree, and we shall here briefly give our reasons:

The cases observed by us presented these special features: No hereditary, mental, nervous or degenerative predisposition; in the personal antecedents of our patients there could not be found any cause to explain the development and determination of the mental alienation, other than syphilitic infection contracted at a time more or less near to the initiation of the insanity. Besides this the complete picture of a simple functional insanity, with an exceptionally brief course, rapid and perfect cure after the exhibition of syphilitic remedies. Further, in one case, the recurrence of the maniacal excitement, at a period coinciding with the suspension of the remedies, and the reappearance of new syphilitic manifestations—the complete and permanent cure without any defect whatever in the use of mixed treatment.

What further could one wish to justify the characterization of these forms as true syphilitic psycho-neuroses?

We shall exclude, then, as does Mairet and the other opponents, cases of syphilitic hypochondriacal melancholia, of syphilophobia, and also Fournier's case on which there might be some doubt; but can we exclude the others? Can we speak of maniacal agitation as secondary to a syphilitic manifestation—the cephalgia—when there has been no intense cephalgia, in the beginning, of course, of the insanity?

And can we speak of hypochondria or syphilophobia when many patients ignore even the existence in their organisms of the syphilitic virus, or when their psychic sensibility is not sufficiently developed to preoccupy their minds or make them fear that infection to the point of provoking the loss of equilibrium of their mental faculties?

Can we sincerely speak of coincidence when, besides the unique and evident connection of cause and effect, we have the brief course and duration and the prompt cure after the use of exclusively anti-syphilitic remedies?

Nor can it be admitted that in the initial period we have to deal with a pseudo-paralysis, when it has been proved—

among others, by Mairet himself — that it lasts only a few weeks; two, three or four months, and when, in our patients, no organic symptoms whatever had supervened even at the end of several years.

Excluding, therefore, all possible objections, it only remains for us to accept a syphilitic psycho-neurosis, *per se*, and this, basing it on clinical observations, we maintain.

In a subordinate way we believe that the existence cannot be denied of a form, if not clinically and absolutely autonomous, at least of an autonomy derived only from etiological factors and from the most important deductions which these furnish to prognosis and therapy.

And we are convinced that, considering that syphilis is regarded as being so widely diffused as to justify the appellation of "the disease of the century," and accepting the old dictum, *nemo syphiliticus ante mortem, beatus est*, the knowledge of this feature in the treatment of certain psycho-neuroses promises well for suffering humanity in the daily practice of hospitals for the insane.

There remains still, one more question: how does the syphilitic infection act in the production of a psycho-neurosis?

And here we must acknowledge that we have no facts on which to base concrete statements, and we can only submit some simple hypotheses.

The first would be to attribute to the syphilitic virus and its toxins, the same action on the nervous centres as have the typhoid bacilli — puerperal infection, etc.

Another supposition would be to admit that the organic deterioration, the anaemia, the state of cachexia peculiar to syphilis, that condition, in short, known to syphiliographers as *syphilaemia* produces such changes in nutrition, more especially in the brain, as to cause a loss of the mental equilibrium.

And now we shall briefly present our clinical observations.

We have chosen, from many forms of syphilitic psycho-neurosis seen in our hospital, only those which could be

open to no objection nor doubt, and in which cause and effect, remedy and relief, are intimately and manifestly connected.

CASE I.

P. G., male, of 35 years, teacher of gymnastics in Palermo, admitted April 18, 1891.

No hereditary tendencies either on paternal or maternal side. In the personal anamnesis nothing of importance except the contraction of syphilis years before. No anthropological degenerations. Cranium mesocephalic.

In the physical examination nothing noteworthy in regard to the various forms of sensibility, motility and reflexes, so we shall go on to the investigations into the psychic condition. There was, however, a slight exaggeration of the tendon reflexes and a slight retardation of the pupillary reflex, both to light and accommodation.

The psychological condition was that of mania, the patient had great psychomotor agitation and rapid and illogical association of ideas. These were delusions of grandeur, unsystematized and unlimited, but labile; now he was a great general; now a famous singer. The delirium was not sufficient, however, to cloud his consciousness of his own personality, it only made him, so to speak, behold himself magnified through the prism of delirium.

A short time after his admission, it was suspected that his alienation was dependent on past syphilis, and energetic mixed treatment was begun, consisting of daily injections of 1 c gr. of sublimate and the administration of iodide of potash, given in rapidly increasing doses until 6 grm. a day were being taken. Besides the specific treatment, it was deemed advisable to give a daily prolonged hot bath, with cold applications to the head.

From my daily notes, which it is useless to transpose entire, it is shown that after about fifteen days the psychomotor disturbances had almost entirely disappeared; there remained only some delirious ideas of grandeur, labile, and with a tendency to exalted mood. The amelioration of the mental condition was progressive, and after a month and a

half of treatment, one might say convalescence began, there remained only a slight functional mental exhaustion which gradually disappeared.

He was kept in the hospital for another month, with the view of making the cure more certain, and after a month and a half of further residence he was dismissed recovered.

He resumed his professional occupations, and, up till the present time — seven years ago — has presented no mental disturbance whatever.

CASE II.

M. G., 24 years old, from Sulmona, entered March 4, 1894, of not irreproachable character.

No hereditary taint nor degenerative stigmata except a slight facial asymmetry.

The actual onset was quite sudden and without any appreciable cause.

The physical examination revealed nothing of importance but owing to the great excitement it was impossible to make a satisfactory examination. There was present an erythematous eruption consisting of copper-colored spots about the size of a penny, over the whole body but especially over the abdomen and back.

The mental condition was that of typical mania, intense motor excitement, flight of ideas, sensorial errors, labile delusions and exalted humor with more or less complete clouding of consciousness.

Soon after her admission, it was suspected that the mental condition was dependent on syphilitic infection, the suspicion arising from the examination of the spots, the appearance of which was characteristic though the history in this respect was negative.

She was immediately placed on mixed treatment (injections of sublimate and iodide of potash in large doses) began to improve rapidly, and after three months was dismissed from the hospital.

CASE III.

V. S., 30 years old, shepherd, admitted May 24, 1894.

Nothing worthy of note in anamnesis of family. In the

patient alone was there a history of syphilis contracted a few years before and transmitted to his child.

No degenerations of importance noted in the anthropological examination.

The result of the examinations of sensibility, motility and reflexes were also negative.

The actual onset of the mental disturbance was sudden, began without apparent cause, and was preceded by a state of depression. After being a few days in the hospital he manifested delirious ideas, chiefly of grandeur, but they were vague, odd, varied and labile. He was very much agitated, loquacious and impulsive.

Syphilis was suspected and he was given iodides, after which he improved rapidly so that after about a month he became convalescent.

He was then given tonic treatment, the anti-syphilitic remedies being limited to the administration of the iodides, and on the 14th of July he was dismissed at the urgent request of his family.

CASE IV.

D. B. F., of Antonino, 27 years old, farmer, uneducated.

Admitted May 28, 1895, with great psychic disturbances, which it was impossible, at first, to note in consequence of wounds and recent cicatrices on the scalp and forehead.

No information could be obtained in regard to the parents and relatives from the invalid, but a brother said that he had once had fits of delirium.

Nothing noteworthy in the anthropological examination.

There were numerous enlarged glands due to syphilitic infection, contracted a short time before and almost completely overlooked.

It was not possible to complete the anthropological examination owing to the mental condition of the patient; however, the muscular tendons and iridal reflexes appeared normal though the pupillary reaction to light and accommodation was somewhat slow; they were, however, the same in size, and dilated equally.

Nothing worthy of note in regard to motility, except the multiformity of the movements.

The psychical examination presented all the characters of manic excitement.

He was immediately put upon anti-syphilitic treatment, and after fourteen days the patient was quite quiet; did some work about the ward, and his reasoning began to show some logical coördination of ideas.

There supervening, after ten or twelve injections of sublimate, an intense and rebellious stomatitis, I was compelled to suspend the administration of this and depend only on the iodide of potash in large doses.

He improved very rapidly, and was dismissed from the asylum October 5, 1895, completely well.

CASE V.

T. A., age 26, mason.

Nothing important in the family history; father and mother still living at an advanced age, have always had and still enjoy good health.

Antonino was treated during his first months of military service, for the initial lesion and consecutive syphilitomata in the military hospital. Two or three months after the appearance of the first symptoms he became restless, irritable, insubordinate, and given to strange acts; for these he was again remanded to the hospital for observation, and to leave it only in fear of punishment.

On January 12, 1895, he came, for the first time, to the asylum, accompanied by a policeman, as he had entered a café for a drink and had broken everything within reach.

At the brief preliminary examination, which alone could be given, owing to the condition of the patient, nothing important anthropologically could be obtained; sensibility, reflexes and motility appeared to be normal.

On the face, antero-internal aspect of arm and forearm, on the chest and thigh was the characteristic syphilitic roseola.

He was the victim of great agitation, laughed continuously, looked about with threatening brows, spat upon those

who approached, attempted to kick and bite, was incoherent, had flight of ideas, was loquacious and incoördinated; it was impossible to fix the attention on any given object, to make him follow out an idea, or respond to a question.

Consciousness was completely obscured. The mixed treatment was immediately begun, and after eight or ten days its beneficial effects could be noted. After fifteen days there was no trace of the roseola. After about a month and a half, the patient might be said to be cured, but he was detained a little longer both to be certain of permanency and because he did not think he would continue the remedies at home.

August 29, 1895, he was dismissed completely cured.

However, on returning home, he neglected to take his medicine, and on November 12, 1896, returned to the asylum, having been acting strangely.

His relatives said that after his dismissal from the hospital he had been quite well, but that fifteen days ago he had begun to show signs of irritability and excitement, so that he had to be restrained and returned to the hospital.

At the examination, the only new features discovered were hypertrophic mucous patches about the anus and abundant plâques on the lips, oral membrane and throat.

There was also marked oligaemia.

The mental condition was almost identical with that present at his first admission, except that he seemed a little less excited. As before, he was put on mixed antisyphilitic and tonic treatment, and the plâques were cauterized with silver nitrate.

After a few days the symptoms all began to ameliorate, the plâques almost all disappeared, the general nutrition improved and the mental equilibrium to be established, and there remained only a few obstinate plâques in the mouth, at last these also disappeared, and on the 30th of December, 1896, he was dismissed, entirely cured.

But neglecting, as usual, to continue his medicine, he again returned, June 10, 1897, with the same mental symptoms and in addition a phagedenic ulcer, mucous plâques, glandular enlargements, etc.

We were compelled to place him in the infirmary in order to obtain the constant attention of which he was in need. Besides local applications he was given the usual mixed treatment. After this he gradually improved until he became entirely well, and on September 12th he was discharged.

LITERATURE.

1. Geronimo Fracastaro. *De morbo gallico.*
2. De morbi gallici curatione (1519).
3. Vedi Opera omnia, vol. ii, page 525.
4. De sedibus et causis morborum per anatomen indagatis, chapter ix, art. 23, book i.
5. De morbio veneris, 1740, chapter ix, book iv.
6. Abhandlung ueber die vener. Krankheiten, 1787, chapter vii.
7. Recherches sur les maladies veneriennes chroniques, masquées, dégénérées ou compliquées, Paris, 1783.
8. Recherches anat-patholog sur l'encephale, 1834, vol. iii.
9. La syphilis cérébrale ou méningienne, Annales de therapeutique, 1847, vol. v.
10. Gazette des hospitaux, Feb. 1846.
11. Ebrard, neuroses syphilitiques, Gazette medic de Paris, Feb., 1843.
12. Knorre, Deutsche Klinik, Dec., 1849.
13. Gros and Lanceraux, Des affections nerveuses syphilitiques, Paris, 1861.
14. Zambaco, Des affections nerveuses syphilitiques.
15. Quoted by Mauriac, affections syphilitiques précoces des centres nerveux, annales de dermatologie et de syphiligraphie, 1879-80.
16. Op. Cit., chapter ix, book i.
17. Loc. Cit.
18. Article in Annali di Neurologia, yr. ix, vols. i, ii, iii.
19. Ueber die Hirnkrankung der Syphilitischae Archio der Heilkunde xi, 1880, and Die luetische Erkrankung der Hirnarterien, Leipzlg, 1874.
20. Vedi Syphilis cerebrale, Gazette hebdomadaire, 1882.
21. Contributo allo studio della sifilide cerebrale arch. de med. experiment et d'anatomie patholog, May 1, 1891.

22. Mairet, Alienation mentale syphilitique, Paris, 1893, page 69, 113 et seq.
23. Quoted by Boubila in an article on cloroovo d'oro e di sodio nella paralisi generale, annales medic. psych., 1892.
24. Centralblatt für Nervenheilkunde und Psychiatrie, Nov., 1893, pp. 505, 518.
25. Relazione fra sifilide e paralisi generale arch. italiano per le malattie mentale e nervose, 1884.
26. Quoted by Bounet, Contributo allo studio sull 'eziologia della paralisi generale, annales med-psychol, 1991.
27. Quoted by Reinhard, Contributo alla eziologia della paralisi progressiva, Riv. sper. di freniatria. 1886.
28. Quoted by Parant, Syphilis et folie, annales med-psych., 1888.
29. Regis, syphilis et paralisi generale archives cliniques des Bordeaux, 1892.
30. Quoted by Regis in above mentioned work.
31. Quoted by Bouchard, Della frequenza della paralisi generale, annales med-psych, 1891.
32. Arch. italiano della malattie nervose e mentale, 1889.
33. Livi Eziologia della paralisi progressiva Riv. sperimentale de freniat, 1877.
34. Quoted by Reinhard.
35. Quoted by Parant.
36. Quoted by Regis.
37. Snell on the relations between dementia paralytica and syphilis, Allgemeini Zeitscript, Bd. 89, 1882.
38. Relations of syphilis to general paralysis, ALIENIST AND NEUROLOGIST, 1883.
39. Allgemeine Zeitschr. f. Psychiat, 1885, p. 532.
40. Id. 1886, vol. xlvi, general paralysis of the insane.
41. Des antécédents syphilitiques chez quelques paralytiques généraux, ann. med-psych., May-June, 1893.
42. Les causes de la paralysie générale, ann. med-psych., January-February, 1893.
43. On the doctrine of syphilitic spinal paralysis of Erb, Neurologisches Centralblatt, 1893.
44. Paris, 1885.

45. Statistical contribution to the question of syphilis and tabes, *Neurologisches and Centralblatt*, 1892.
46. *Neurologisches Centralblatt*, 1891.
47. *Trattato delle malattie veneree*, page 691.
48. Quoted by Heubner in Ziemssen, vol. xi, part i, page 299.
49. Id. page 695.
50. Rivista critica generale de Dr. Seppilli sulla *sifilide cerebrale* in rapporto all malattie mentale, *Riv. Speriment di freniat*, 1877, page 472.
51. *Revue Neurol.*, November, 1893.
52. Lectures by Prof. Murri on the diagnosis of syphilitic lesions of the brain.
53. *Lezurie-Hysteric et syphilis, annales medico-psychologiques*, 1891, page 484.
54. *Hysterie et syphilis, lectures published in Progrés medical*.
55. *Brain*, 1883, page 44.
56. Profeta, Op. Cit., page 706.
57. Profeta, Op. Cit., page 704.
58. *Reforma medica*, April, 1891.
59. Zur Syphilis des Centralnervensystems und der Psychosen, *Allgemeine Zeitschrift für Psychiatrie*, Bd 48.
60. *Rw. Sper. di fren.*, 1892, page 445.
61. La sifilide cerebrale en rapporto allo malattie mentale, *Riv. critica* by Dr. Seppilli in *Riv. sper. di fren.*, 1877, page 472.
62. Loc. Cit.
63. Mairet, Op. Cit., page 35.
64. Mairet, Op. Cit., page 40.

SELECTIONS.

CLINICAL NEUROLOGY.

TETANY IN DILATATION OF THE STOMACH—Sievers (*Berl. Klin. Woch.*, August 1 and 8, 1898) reports two fatal cases of tetany. Tetany occurs most often in gastro-enteric disorders, though it is not limited to them.. In both the writer's cases it was associated with extreme dilatation of the stomach, caused by pyloric obstruction from the scars of old simple ulcers. In both the women, who were 21 and 42 years old, it began suddenly with cramps and pains in the limbs, and proved fatal within a few hours. There were carpo-pedal spasms, opisthotonus, tonic contractions in various muscles of the body, and fever. The abdominal muscles were flaccid. There was no trismus at first, though in one case it appeared towards the end, which was preceded also by cyanosis and unconsciousness.

The connection between tetany and dilatation of the stomach has lately aroused considerable attention. Though very rare there are nearly forty known cases. The combination is extremely fatal, the mortality being about 70 per cent. The etiology of tetany is obscure. That it is reflex is supported by the fact that it occurs in conjunction with intestinal worms and other irritants. Collier (*Lancet*, vol 1, 1891, p. 1251) produced an attack by washing out the stomach, and others have seen the same effect by simply percussing over it. Frankl-Hochwart, from some of its symptoms, such as fever, etc., and from the fact that it occurs chiefly during certain months—December to April—supposed it to be a specific infective disease. The latest theory is that of Bouveret and Devic, who find that tetany

of gastric origin, usually occurs in patients suffering from hypo-secretion of hydrochloric acid, and have concluded that it is a complication of the chronic form of Reichmann's disease. Sievers has been able to collect twenty-seven fatal cases of tetany with gastric dilatation, which were examined post-mortem, and finds that in most cases the dilatation was secondary to stricture of the pylorus or duodenum from ulcers of their cicatrices. This might be thought to support the views of Bouveret and Devic as it is precisely in such cases that hyperchlorhydria occurs, but occasionally hydrochloric acid is found by analysis to be completely absent. Sometimes the stricture is due to cancer, when, according to modern views hydrochloric acid is deficient. The writer believes the most satisfactory theory to be that which explains the tetany by an antointoxication from the alimentary canal.

XEROSTOMIA OR MOUTH DRYNESS—Since the publication of the earlier cases of this somewhat rare affection by Mr. Jonathan Hutchinson and the late Dr. Haddon, in the *Transactions of the Clinical Society of London*, in 1888, some additional cases have been observed. Professor Fraser (*Edin. Hosp. Rep.*, 1893, Vol. I.) describes the case of a young woman who had suffered from dryness of the mouth for eighteen months. A special feature was associated dryness of the nose and eye-balls, so that she could not shed tears. A tabulated account of all the cases recorded up to 1893 is given. Since that date a few further cases have been recorded. At a meeting of the Clinical Society of London, February 6, 1895, Battle (*Brit. Med. Jour.* London, February 16, 1895) showed a woman who had suffered for five years from mouth-dryness, which was associated with intermittent attacks of parotitis. Every three or four weeks during the last two years the submaxillary glands had become enlarged.

Dr. Thomas Harris, of Manchester, (*Am. Jour. Med. Sc.*, Phila., March, 1898), has reported another case, which he had previously shown in 1894. Both parotid glands had been enlarged during the three years in which the mouth-dryness had existed. They were uniformly enlarged and of

firm consistence and pain and tenderness were entirely absent. The orifices of the ducts appeared natural; firm pressure along the course of each expressed glairy mucus. There was no associated enlargement of the sublingual or submaxillary glands, nor was there any affection of the lymphatics. In this patient there was also a slight dryness of the mucous membrane of the nose, and both taste and smell were interfered with. There was an arrest of secretion of all the buccal glands. The patient, as in the majority of these cases, was a woman. Treatment by tonics, jaborandi, and the faradic current gave no relief.

In the *Lancet*, April 23, 1898, another case is reported by Dr. Sharp, of Whitby, in which a single woman, aged forty-one, had suffered for eighteen months from constant dryness of the mouth. Here certain features, which were present in the previous case, were absent; there was no interference with secretion of tears, no enlargement of the parotid glands, no depreciation of the sense of taste or smell, and little, if any, dryness of the nose. The patient reported that she was improving with medium doses of mercuric iodide and quassia.—*Edin. Med. Jour.*

FOCAL HEMORRHAGES IN THE SPINAL CORD FROM TRAUMATISM.—Pearce Bailey believes that focal hemorrhages of the gray matter were by no means infrequent. He gave some of the diagnostic points which enable a distinction to be made between such hemorrhages and those which are sufficiently large to be accompanied by compression of the cord. These focal hemorrhages are confined almost entirely to the gray matter and are almost always found in the cervical or upper dorsal region. The extravasation on its absorption leaves a cavity which may remain intact or be filled by new tissue. Secondary degenerations are usually not pronounced. The sensory symptoms consist, in addition to pain in the neck, of a loss of pain or temperature sense, with perfect preservation of tactile sensibility.

The prognosis is better than for any other form of injury to the cervical region of the spinal cord. Several cases were cited to show how rapid recovery may be. Two

personally observed cases were also reported. In one; after complete paralysis of arms and legs, with loss of power of the sphincters resulting from a diving accident, the patient could use his hands, and walk unassisted up four flights of stairs, in less than two months; the other, a man who, as the result of a fall of thirty feet, was completely paralyzed in the legs, with retention of urine, was able to go to work (night-watchman) in two months.

This paper is very instructive, dealing as it does with the much-discussed question of traumatism of the spinal column; it throws considerable light on the pathology of these affections, and incidentally shows the relation which may exist between traumatism and syringomyelia.—Johns Hopkins Hospital Medical Society. (*Johns Hopkins Hospital Bulletin*, Dec., 1898.)

THE PIANO AND NEUROSES.—Dr. Waetzold (*Journal d' Hygiene*, January 5, 1899), thinks that the chloroses and neuroses, from which so many young girls suffer, may be largely attributed to the abuse of the piano. It is necessary, says the author, to abandon the deadly habit of compelling young girls to hammer on the keyboard before they are fifteen or sixteen years of age. Even at this age the exercise should be permitted only to those who are really talented and are possessed of a robust temperament. Dr. Waetzold shows that out of one thousand young girls studying the piano before the age of twelve years, six hundred were afflicted with nervous troubles later on, while the number having affections of this kind was only two hundred for those who commenced the study of the piano at a later age, and only one hundred were affected among those who had never touched this instrument. The study of the violin produces even more disastrous results than those attributed to the piano.—*Medical Record*.

POLYMYOSITIS.—Sir W. R. Gowers (*Brit. Med. Jour.* 14th January) discusses this disease in his usual able manner. This is a rare disease, but it is important because it is so formidable. It has a close relationship to another disease that is common enough—namely, polyneuritis.

In this severe disease, the nerves suffer with the muscles, though it would seem less widely. In the case of polyneuritis it is the peripheral nerves and those in the extremities that are mainly affected. It is also specially a bilateral disease. The motor or the sensory nerves may be mostly involved, but very generally both are implicated. Although a bilateral disease, it is often more severe on one side than on the other.

This bilateral feature is a genuine characteristic of polyneuritis. It brands the disease as a constitutional one. Not only are there structures on each side of the body of nearly equal liability to the disease, but these must be reached through the blood. The poison may be varied, but the channel of conduction common, that is, the vascular system. The power in certain tissues of the body to endure or resist diseases differs. This failure to perform function on both sides of the body and in similar structures may be safely taken to be of toxic origin.

The number of toxic agents is great and their nature most varied. Some are taken from without, as the metallic poisons and alcohol. Many of these poisons are the product of low organisms. The body may produce within itself poisons that are extremely damaging, as the products of various bacteria that are introduced into the system, but we have also the toxic products that arise from deranged metabolism, as in gout. Then again, exposure to cold is capable of causing grave disease and deranging the functions of certain of the glands so as to throw into the system large quantities of virulent toxic agents. Some change takes place in the chemical action of the organs of the body, and disease of a constitutional and toxic nature results.

In polymyositis there seems to be developed some form of rheumatic poison that affects the muscles in groups on each side of the body. It is met with almost exclusively as the result of exposure to cold. It may be very acute and severe in some cases, and of extreme chronicity in others. The multiple inflammations affect the nerves and muscles, but the latter more widely than the former. At the first the muscles are very tender, and afterwards under-

go hardening and contraction, and, in time, may resist all efforts to overcome these conditions.

It is usual to obtain a history of rheumatism or gout in the ancestry. Gout often changes in a subsequent generation into the rheumatic form.

The treatment in the early stage of the disease consists in rest, diaphoritics, salicylates and sometimes small doses of mercury. This controls the inflammation and lessens the tendency later on to contractions and deformities. The advantage of early and effective treatment is multiplied manifold in the advantages yielded in the later stage of the disease. If the early stage of the disease is not properly managed a lifetime of the most distressing invalidism may be imposed upon the person, coupled with severe and incurable deformities.—*Canadian Practitioner and Review*.

Our friend Gowers would have come nearer to the true designation of the condition he is describing, if he had designated it as polyneurio myositis, for as we have observed, it is a polyneuritis plus a more or less extensive implication of the muscles with the antecedent rheumatism or gout as the most probable causative factor.

ZUR LEHRE DER SPINALEN NEURITISCHEN MUSKELATROPHIE, ETC. (CONTRIBUTION TO THE STUDY OF SPINAL, NEURITIC, MUSCULAR ATROPHY, ETC.). E. Siemerling (*Archiv. fur Psychiatrie*, Vol. XXXI., Nos. 1 and 2) refers to the fact that cases of progressive neural muscular atrophy with necropsy are very rare. This form of disease is now quite generally recognized. Hoffmann, who has done so much to make it known, regards it as holding an intermediate place between spinal myopathy and muscular dystrophy. In the case which Siemerling reports, atrophy began in the legs of a patient when he was five years of age, and extended to the thighs. Deformity of the feet was also noticed at this time. Two years later, wasting of the hands was observed. When the boy was thirteen years old, walking became impossible, and, when he was twenty, reflex rigidity of the pupils, nasal speech, intense atrophy of the trunk and of all the extremities,

complete flaccid paralysis of the lower limbs with contracture at the right knee, incomplete paralysis of the upper limbs, fibrillary tremors in the intercostal muscles, lost knee-jerks, diminution or abolition of the electrical reactions, imperfect perception of pain, and mental depression, were noted. The microscope showed degeneration of the posterior and lateral columns, most marked in the lower thoracic and upper lumbar regions, atrophy of the cells of the anterior horns, atrophy of Clarke's columns and of the anterior roots, and degeneration of the spinal ganglia, peripheral nerves and muscles. In the few necropsies which have been obtained in cases of progressive neural muscular atrophy, degeneration of the nerves, muscles and posterior columns has been found, and in some cases the cells of the anterior horns of the spinal cord have been involved. The marked alteration of the lateral columns and of the spinal ganglia in Siemerling's case were unusual findings. No proof has been offered that the disease is due to toxic causes. Siemerling believes that the degenerative process begins in the portions of the posterior roots within the spinal cord.—*Spiller & McConnell, Neurological excerpts International Medical Magazine, February.*

MALARIAL PERIPHERAL NEURITIS. Hight (Jour. *Tropical Med.*, Nov., 1898) presents the results of a study of ten cases of malarial neuritis. Intermittent fever, persisting for a long time, or remittent fever with frequent exacerbations, is followed after some months by attacks of pains in the legs and knees. These pains are worse at night, and are sometimes associated with cramp of the muscles. Later the knees feel weak and give way, the limbs become painful in the daytime as well as at night, and the pain extends to the thighs, the back and the arms. Fever persists, the pain interferes with sleep, the weakness may become paralysis, cutaneous sensibility is blunted, and paresthesiae are marked. The loss of muscular power may assume a remittent character. Hemeralopia may occur. The spleen and liver are enlarged. Deep pressure over the muscles causes pain. The tissues become flabby and may atrophy. Effusion into the joints sometimes occurs. The

condition of the heart is variable; at one time it is quiet, and again it is rapid, with arhythmia. Angina and tachycardia have been observed. Anemia, cardiac dilatation and hemic murmurs are noted in some cases. Occasionally there is some edema of the feet. Hight considers malarial peripheral neuritis to be a toxic affection of the nerves, the toxin being the product of the malarial germ. A single attack of fever rarely causes well-marked neuritis; the cumulative action of the poison on the nerves being required to bring about the pathological changes which give rise to the symptoms. The period of incubation extends on an average over eight months. Removal of the cause and efficient hygienic and medicinal treatment usually give good recovery. The diagnosis of the affection must, in most cases, be made from beri-beri. The principal points of difference are that in malarial peripheral neuritis we have marked anemia, mild or absent heart symptoms, enlarged spleen, neuritis preceded by fever and often associated with it, the long incubation, the remittent character, the presence of plasmodium, the shuffling gait when loss of power is marked, and the readiness of cure. In beri-beri affection of the heart is a regular feature, local edema and serious effusions occur, the onset is rapid and usually attended with fever, there is no plasmodium, the gait is equine and typical, and sudden death is common. As the diseases occur in the same regions, one must think of mixed infection.—*Spiller & McConnell.*

TWO CASES OF BRAIN TUMOR. (*Removal-Relief*) A boilermaker, 34 years old. Headache for two years. Loss of power in left hand. Rigidity of the left leg of ten weeks' duration. Headache worse in morning. Frequent vertigo. Eleven weeks before coming under observation, the man fell in a giddy seizure, and struck his head against an angle-iron, without breaking the scalp. He arose, walked about a little, became faint and sat down, shortly afterwards losing consciousness and not regaining it for three days. At the end of this time he could not move his left arm and hand, and the left leg was rather powerless. In a few days the paralysis gradually disappeared, but four

weeks after the accident vomiting set in, and with it paralysis of the left arm and rigidity of the left leg. For between two and three years there had been "like pins and needles," in the left hand, extending up the arm, the member itself being the seat of a sensation as of hot water running down it, and occasionally shaking. There was bilateral optic neuritis. In addition to the weakness of the left leg and hand, there was slight paralysis of the lower half of the left side of the face. Knee-jerk exaggerated, well-marked ankle-clonus on the left. History of gonorrhea, but no syphilis. Potassium iodid and mercuric chlorid were tried without benefit. In the course of two weeks the patient complained of feeling drowsy, with a severe pain in the head, and shortly afterward he vomited. After a little while he had a three minute's convulsion, without loss of consciousness, involving the left arm, left leg and left side of face. In the course of eight days the loss of power had increased and there was analgesia and anesthesia of the left arm and forearm, with slighter loss of sensation in the leg. The muscles of the left arm and leg now began to exhibit signs of atrophy, and the reflexes became even more exaggerated. Painful, cramplike sensations recurred in the left hand and forearm, and increasing anesthesia. No pain on percussion of the skull. An opening in the skull over the Rolandic area disclosed a tumor on the surface of the brain. This was cut out with the handle of scalpel and was rather larger than half of a Tangerine orange. The wound healed without complication. The tumor proved to be a small round-celled sarcoma. The patient made an uninterrupted recovery, although he subsequently had a single convulsive attack.

The second case occurred in an unmarried domestic servant, 23 years old, who presented a partial paralysis of the right leg and complete paralysis of the right arm. Five months earlier the patient had begun to suffer from headache and vomiting. The latter was pronounced in the morning before breakfast, and gradually disappeared during the day; the headache persisted and was generally frontal. After nearly two months numbness appeared in the right

arm and hand, and in a day all power of movement in the arm was lost, the fingers being flexed in the palm of the hand. Some two weeks later a slight convulsion occurred, with loss of consciousness lasting nearly an hour. Subsequently the right leg was also paralyzed and numb. Slight analgesia was found upon the right leg, and the knee-jerk was increased. There was slight paralysis of the lower half of the right side of the face, and the tongue was deflected a little to the right. The expression was dull and heavy. There was complaint of pain in front of and above the left ear when the skull was tapped. Bilateral optic neuritis in the first stage was present, with tortuous vessels, but without retinal hemorrhages. The symptoms suggesting a tumor on the lower portion of the left motor area of the brain, the skull was opened, and the growth, together with a narrow margin of healthy-looking brain tissue, was removed. There was subsequently some aphemia and right-sided weakness, both of which grew progressively less. Histologic examination showed the growth to be an angioma. Oliver and Williamson (*British Medical Journal*, Nov. 26, 1898).

BRAIN TUMOR.—A "symposium" on this subject took place in the Section of Neurology and Medical Jurisprudence at the recent meeting of the American Medical Association. C. H. Hughes (St. Louis), discussed the Symptomatology; F. Peterson (New York), Localization; E. Jackson (Denver), Ocular Symptoms; P. C. Knapp (Boston), Treatment from the Neurological Aspect, and W. W. Keen (Philadelphia), Treatment from the Surgical Aspect. Hughes said that conditions of the intracerebral circulation, excited by or preceding the development of a neoplasm, glioma, or other growth, within the brain, by a morbid cause projecting within it from the brain's enveloping membranes or bony covering, caused a symptomatology—cephalalgia, neuro-retinitis often, and sometimes glaucoma—that might exist independently of any form of intracerebral or intracranial morbid growth. Hysteria complicated, even as it was sometimes complicated by, cerebral tumor. Altered cerebral circulatory states, especially of vasomotor origin, independent

of intracranial growths, were not continuous as tumors were. Chief among the persisting signs were the ocular fundus and pupillary signs, the paralyses of cerebral source, monoplegias, hemiplegias, etc., monospasm, hemispasm, etc., tremors, epilepsy, vertigo, paralyses of sensory, motor, and special senses, inco-ordination, anesthesia and pain due to regional or general cerebral irritation or pressure and degeneration due to intracranial pressure. Such a symptomatology opened the possibilities and consequences of cerebral sclerosis, atheromatous, inflammatory, or specific vascular changes, emboli, thrombi, or thrombotic inflammation of vessels, apoplectic sequelæ, abscesses, interstitial nephritis, uremic, alcoholic, or other toxopathies, involving the brain, its vessels, texture, or coverings, and serous, ventricular, or subarachnoid effusions. Insanity was often a marked symptom of tumors. Peterson presented several charts, one showing the localization of functions in the cortex, another showing the centers of language and the result of their lesions. Jackson referred to optic neuritis as the most striking and significant symptom of brain tumor, occurring in 80 or 90 per cent in all cases. It could not, however, be regarded as pathognomonic, and it was of little value in indicating the location of the tumor. The typical optic neuritis of brain tumor was characterized by great swelling, sometimes 10 to 12 D. (3 millimeters), abruptly limited, at no great distance from the margin of the disc; with arteries narrowed, veins dilated and very tortuous, and small vessels much enlarged, but not very numerous, because scattered through the swollen tissue; small flame-shaped hemorrhages upon or near the papilla; the other portions of the fundus, except for the alteration in the vessels, being normal or presenting changes that were in most cases slight as compared with those at the disc. In contrast, swelling and discoloration of the disc, occurring as an anomaly, were never of very high degree. Jackson also referred to optic atrophy, changes in the pupil, with impairment of accommodation, paresis of the extraocular muscles, nystagmus, impairment of central vision, and limitation of the field of vision, and impairment of color perception. Knapp said

that of four hundred and five cases collected by him the growth in thirty-four was found but could not be removed; in ninety-two it was not found at the point of operation; and in two hundred and twenty-four it was found, but in thirty-four of these it was of such a nature that it could not be wholly removed; in fifty-five, or fourteen per cent, the operation was palliative, and in some of these there was perhaps a mistake in diagnosis. He was not very sanguine as to the results of the operation in cases of tumor, but he dwelt upon the advisability of operative procedure for gummatous and tuberculous growths. The greatest danger was associated with sarcomata and gliomata, the likelihood of recurrence being especially marked. Keen referred to the difficulty of localization, and urged that every case of brain tumor be subjected to faradism during the operation before the tumor or the brain was touched. As to the technique of the operation, Keen advocated a very large opening, as giving a better opportunity to ascertain the location of the tumor.—*British Medical Journal*.

CARBAMIC ACID IN ECLAMPSIA.—K. B. Hofmann (*Centralbl. f. inn. Med.*, July 16, 1898). The cerebro-spinal fluid and urine from a case of eclampsia was clear, alkaline, and the specific gravity 1009. With copper sulphate and sodic hydrate it gave a violet color, but no biuret action. It contained a reducing substance the exact nature of which could not be made out. The author found a small quantity of carbamic acid present. The urine obtained a few days later than the cerebro-spinal fluid also contained carbamic acid. An elaborate account of the chemistry is then given, Drechsel's improved method being the one employed. The presence of Drechsel's reaction shows that in the cerebro-spinal fluid in eclampsia there is an abnormal amount of an ammonium salt which in the presence of an alkaline carbonate and carbon dioxide is converted into ammonium carbamate. This must also occur in the blood and other fluids, and therefore a toxemia with ammonium carbamate results. The high percentage of ammonium salts in the urine is in favor of this view. Further investigations are needed as to the presence of this

salt in the cerebro-spinal fluid both of those suffering from eclampsia and from healthy individuals.—*British Medical Journal*.

TOLERANT REGIONS OF THE BRAIN.—An alienist was shot in the occipital region by a patient, but did not know he was wounded, and inquired if any one had been injured, although he died twenty-four hours later of cerebral compression * * *. A patient of Verneuil's received three balls in the base of the brain, but survived forty-eight hours. * * *. A man found dead, bathed in blood, had a bullet-hole above his ear, and the pistol was found in his pocket. The sphenoidal lobe was affected—one of the parts of the brain that react most slowly to traumatisms (Gilles de la Tourette).—*Semaine Medical*, December 14.

BLACKWATER FEVER AND HEMOGLOBINURIA.—Dr. R. U. Moffat, Principal Medical Officer Uganda Protectorate, writes to the *British Medical Journal* (No. 1969, September 24, 1898):

The recently expressed opinion of Professor Koch that hemoglobinuria (blackwater fever) is only another name for quinine poisoning is one calculated, I am afraid, to do much harm. Such, at least, is my opinion, believing, as I do, that with quinine, and quinine alone, can we combat the disease with any hope of success.

Speaking with all due humility and respect, I must confess that I think Professor Koch should have kept his theory to himself until he had absolutely proved its truth beyond a doubt.

It is difficult enough at all times to get patients to take quinine properly. Anyone who has had much experience with malarial patients has heard such objections as these: "It (quinine) makes me deaf;" "Gives me a head;" "Upsets my stomach;" "Nasty taste," etc.

A new terror now awaits the unfortunate medical man when he tries to treat his patients with quinine. Koch's theory will be thrown in his teeth; and should his patient die after taking quinine and developing blackwater fever, the doctor will have to incur the odium of being the cause

of the fatal termination. It is a subject of the greatest interest to all those exposed to malaria, and I may mention that almost every man whom I met in East Africa during the last few months questioned me eagerly about it. The pernicious results of Professor Koch's theory on the lay mind are already manifest. One man stationed in a very unhealthy part, and much troubled with fever, informed me that in future he intends to have nothing to do with quinine. His future history will be interesting; and it is comforting any way to think that his folly may perhaps be of service in the cause of science, since he is practically offering his constitution as an illustrative case. Two leading London papers have had articles on the subject, so that Professor Koch's theory is being spread widely. This, to my mind, is a serious thing. Professor Koch may be right in saying that quinine poisoning causes hemoglobinuria. I do not possess sufficient knowledge to criticise that statement. This much I will say: that after seven years in Eastern Equatorial Africa, during which time I have treated many hundreds of cases of malaria, I have never seen a man die of fever when quinine was given properly and early in the case. The fatal cases, whether complicated with hemoglobinuria or not, have all been those in which for some reason quinine has not been administered, or was given in very small doses, or else resorted to only when the case was practically hopeless.

Of blackwater fever I have seen but little, for our European population in Uganda has up to now been small, and as far as my experience goes the disease does not occur among natives. Out of nine cases of blackwater fever which I have actually treated myself, two were fatal; in both the administration of quinine was neglected until too late. All the cases which recovered were treated with heroic doses (30 grains in twenty-four hours), and the attack lasted four days, the hemoglobinuria subsiding gradually. In the other cases, in which much larger doses were administered (60 to 120 grains in twenty-four hours), the hemoglobinuria only lasted from twenty-four to thirty-six hours, and stopped quite suddenly.

In ordinary cases of malignant tertian fever I have pushed quinine until I myself had begun to think that the limit of safety had been reached, and that the patient was well-nigh poisoned with the drug, but never in such cases have I seen hemoglobinuria supervene. Speaking in the light of much experience, I can only say that my humble opinion is that there is only one treatment for malaria: quinine, more quinine, and yet more quinine.

We quote this for comment, as follows: There are medical men in the marshy districts of America who know better than to believe that sufficiently large therapeutic doses of quinine develop hemoglobinuria if promptly and periodically given, and as promptly discontinued after the malarial disease is conquered, though it has been observed in this country, many times over, that hemoglobinuria develops when quinine treatment has been given in inadequately small doses.

The best form of quinia is the soluble muriate, and not less than eight grain doses should be given four times in twenty-four hours, or three ten-grain doses daily.

There are men, however, who will accept this doctrine of Koch, and withhold quinine in pernicious malarial poisoning where, unless quinia be given largely and freely, the fate of the patient is speedily sealed.

Malaria and quinia are to be duly considered in neurological as well as general practice in this section and on the bottom lands of the south. Insanity, paralysis, neuritides, neuralgia, etc., proceed often from the laveran invasion of the blood of patients in this section.

EARLY RECOGNITION OF PARETIC DEMENTIA.—Chief among the early signs are: (1) The stammering, tremulous speech; (2) the tremor of the facial muscles and of the tongue; (3) the pupillary symptoms; (4) the change in the individual's handwriting; (5) the exaggeration or the absence of the reflexes. The disturbance of speech is unquestionably one of the earliest symptoms, and is so characteristic that one is not infrequently tempted to make the diagnosis of progressive dementia if a patient who has shown some mental change has in addition that peculiar

stammering utterance which makes the use of words of many syllables, or of sentences in which there is any alliteration, particularly difficult. Yet it occurs at times in persons whose mental deterioration is of distinctly alcoholic origin.

The tremor of the facial muscles, which occurs only in progressive dementia and in chronic alcoholism, is a symptom of the greatest value. If alcoholism can be excluded, it is unquestionably a grave symptom, and may well support the diagnosis of paretic dementia.

The pupillary symptoms have by many writers been placed first among the physical symptoms. In several patients of mine they have not been developed until long after the appearance of the characteristic speech disturbances and of the facial tremor. The typical Argyll Robertson pupil is common enough, and particularly in those forms associated with tabetic symptoms. The complete immobility of the pupils, both to light and during accommodation, is present in a large number of cases, and is often associated with inequality of the pupils and with the history of preceding ocular palsies, all of which occur more commonly in those who have been exposed to syphilitic contagion. The irregular contour of the pupil has been described as occurring in paretics. It is not dependent upon a preceding iritis, is more probably due to defective innervation, and is, by the way, often seen in persons with constitutional syphilis and also in some young and healthy persons.

The changes in the handwriting are of special value, not only as illustrating the tremor of the fingers and of the hand, but as giving the first evidences of that mental dissolution which is most marked in acts which have been performed with the greatest skill. The dropping of letters from words that were written with ease and almost unconsciously, the omission of syllables, the running together of words that should be separated, and the entire failure to punctuate, may be the first signs pointing to serious mental defect. Too much importance should not be attached to the tremor alone, for in other diseases, and particularly in multiple sclerosis, very similar physical disturbance occurs.

The reflexes invite close attention, for, if absent, they may be part of the symptoms of a tabetic process with which progressive dementia is frequently associated. If exaggerated, great care should be taken not to formulate the diagnosis unless a purely neurasthenic condition can be safely excluded.—Dr. B. Sachs, (*New York Medical Journal*, Vol. lxviii, No. 2).

DIET IN HEADACHE, EPILEPSY AND MENTAL DEPRESSION.—“Those headaches associated with an excess of uric acid in the urine, are treated by excluding from the diet all fishes, meat, eggs, tea, coffee and cocoa, and giving milk, cheese, pulses, cereal foods and fruit. From the change of diet the nutrition of the patient is lowered, so that the stored reserves of uric acid flood the blood, and, besides, many vegetable foods introduce more alkali and less acid into the body than do the animal foods interdicted, and thus increase the alkalinity of the blood, and flood it with uric acid. For these reasons an increase of headache occurs in the beginning of the treatment. To tide the patient over the period of excessive headache, a mixture of bromide of ammonium and salicylate of ammonium is given. However, this plan of diet is to be persevered in, for the increase of headache, in the beginning of the treatment, when the first rush of uric acid occurs, is to be regarded rather as a favorable than an unfavorable sign.

“In mental depression the same diet is used, and, to conserve the patient’s strength and energy, he is put to bed with most happy results.

“In the treatment of epilepsy success was not so well marked, but a thorough trial treatment is insisted upon before the plan is abandoned. Here, too, an increase in the number of convulsions may occur in the commencement, which, however, is not to be regarded as unfavorable.”—Dr. Alexander Haig in *Brain*.

A NEW SYMPTOM IN PERIPHERAL FACIAL PARALYSIS.—Bordier and Frankel, in the *Medical Week*, October 1, 1897, relate their observations of a phenomenon in facial

palsy, the original discovery of which they believe to have made.

Their observations lead them to ascribe to this new symptom both diagnostic and prognostic value.

If a patient with a severe facial paralysis is asked to shut his eyes, it will be found that while the eye on the normal side closes promptly and well, the one on the diseased side presents but a slight narrowing of the palpebral fissure. Now, if the closing effort be continued, the globe of the eye of the affected side will be seen to move first upward then slightly outward, the eyelid in the meantime finishing its descent according to the degree of the paralysis of the orbicular muscle.

Trial will demonstrate that the patient cannot close the affected eye without this outward and upward movement of the globe; hence, if the patient is looking at some object, he is compelled to remove his gaze before he can close the eye.

The authors ascribe a triple value to the symptom.

1. It occurs only in peripheral diseases.
2. The symptom is marked only when reaction of degeneration is complete; hence its presence stamps the paralysis as severe and serious, and in the cases observed, where the orbicular is contracted without the deviation of the globe, the paralysis proved transient and curable.
3. It permits an accurate judgment of the progress of the recovery, since such result is invariably accompanied by a lessening deviation during orbicular contraction.—Aldrich's Excerpts in *Cleveland Medical Gazette*.

PHYSICAL IMMUNITY OF THE ARAB.—The *Lancet* publishes the interesting fact noted by M. Vincent and reported at a meeting of the Academy of Medicine recently held in Paris, that French soldiers are fully a hundred times more susceptible to typhoid fever than are native Arab soldiers. M. Vincent holds the opinion that this exemption of native Arabs from infection by typhoid fever does not depend upon previous attack nor upon a gradually developed immunity by the use of water contaminated with typhoid fever germs,

but to a natural immunity. An examination of the blood by the reaction method showed no serum reaction. It is thus shown that the immunity possessed by the Arab consists in ability to resist the invasion of typhoid-fever germs.

The difference between the Frenchman and the Arab in his ability to resist infection must be largely attributable to the difference in the dietary and modes of life of these two classes of men. The French nation has degenerated, within a few centuries, to a remarkable extent. Although descended from a magnificent race, the gigantic Gauls, who were able to strike terror into the hearts of their Roman enemies by means of their majestic stature and marvelous physical prowess, they have come to be, through the influence of wine, absinthe, immorality, and other deteriorating causes, almost the smallest of European people. The average Frenchman devotes a considerable part of his energies to animal gratification. The Arab, on the other hand, is abstemious, a fact well illustrated by an incident reported by a traveler.

Meeting an Arab in the desert on a very hot, sultry day, he offered him a drink from his canteen, and was astonished at the reply he received, which was this: "No, thank you; this is not my day to drink. I drank yesterday."

A handful of grapes and a small barley cake constitute a day's rations for the Arab. De Lesseps stated publicly that he never could have constructed the Suez Canal without the aid of the date and barley eating Arabs, who alone were able to endure the necessary labor in the unfavorable climate of that region. The writer is personally acquainted with a man who was an assistant engineer under De Lesseps in the construction of the Suez Canal, and recently received from this gentleman an account of observations which exactly tallied with those of De Lesseps.—*Modern Medicine*.

OPTIC NEURITIS AND BRAIN TUMOR.—Krauss (*Philad. Med. Jour.*, Oct. 1) says optic neuritis is present in about 90 per cent. of all brain tumors, and more frequently in the cerebral than in the cerebellar. The location, size and na-

ture of the tumor has little influence over the production of appearance of the papillitis. Tumors of rapid growth are more liable to produce optic neuritis. He believes it "probable that unilateral choked disc is indicative of disease in the hemisphere corresponding to the eye involved" and considers it doubtful whether the increased intra-cranial pressure is alone responsible for the production of the optic neuritis.—Frank L. Henderson's Excerpts in St. Louis *Medical Gazette*.

A CASE OF PSEUDOTETANUS.—Under this title T. Escherich describes a case in the *Wiener Klinische Rundschau* of December 4, 1898. The patient was a girl five years old, who had been previously well excepting an attack of typhoid fever the year before. On July 10, 1898, the mother noticed that the child held its head stiffly, and on the following day the cramp had extended to the back and legs. There was vomiting of brownish masses. On the third day the child could not open its mouth.

On admission to the hospital the same day there were the characteristic appearances associated with traumatic tetanus. The muscles were contracted, the teeth pressed together, and the feet were in an equinus position. These tonic contractions were of variable duration. During the severe spasms the back was entirely raised from the bed, presenting the typical *arc-en-cercle* of hysteria. This attack lasted from a few minutes to an hour. The muscles of respiration were more or less involved; breathing was irregular and stertorous. The child was cyanotic. The disease presented its greatest severity from the 14th to the 24th of July; during this time nourishment was kept up by a tube. On the 24th of July, two weeks from the commencement of the disorder, the contractures became less marked and the little patient began to be fed with a spoon. On August 1, the muscles had again become flaccid, with the exception of those extending the foot. August 20 the patient could stand alone, and four days later she was discharged recovered. During the entire illness there was no fever nor any disturbance of the vegetative functions, and the mind remained clear. The facial phenomenon and Troussseau's sign were

not obtained. The galvanic tonus was not increased. Mechanical reaction of the muscles was greatly exaggerated, the superficial and deep reflexes increased. No pain was complained of excepting in the neck, and only during the severest spasms.

The author thinks that the case should be classed under pseudo-tetanus, for a description of which he refers to his work, "*Tetany, Traité des Maladies de l'Enfance*," tome iv. In this disease he says the cramps are found in the legs and back muscles, while the arms remain relatively free. Trousseau's sign is absent, and the mechanical reactions as well as the tendon-jerks are increased, in these respects differing from ordinary cases of tetany. In the case which he describes, the extent of the cramps and the involvement of the muscles of the jaw give it a close resemblance to ordinary traumatic tetanus.

GENERAL PARALYSIS PRECEDED BY OPTIC ATROPHY.—Dr. Philip Coombs Knapp, Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital, discusses the subject as follows, and in confirmation reports three illustrative cases: That primary atrophy of the optic nerves is a symptom of grave significance not only as regards vision but as regards the future health of the patient is a well recognized fact. Not especially rare in tabes, occurring in 27 out of 400 cases (6.75 per cent.) collected by Leimbach, it is said to be nearly as common in general paralysis of the insane, having been found in 65 out of 1,326 cases (4.9 per cent.) studied at the Charité in Berlin by Hans Gudden. The statistics of other observers vary somewhat from these figures, but although Morselli thinks that optic atrophy is very common in general paralysis, no one now repeats the remarkable observations of Clifford Albutt, who found 44 cases of atrophy in 53 cases of general paralysis, or of Tebaldi, who found the fundus healthy in only one case out of 20. In my own experience optic atrophy to a degree marked enough to cause blindness is rare in general paralysis.

Mendel and Mickle, in their monographs on general paralysis, have both cited various reported cases in which the optic atrophy preceded the other symptoms of general paralysis by a considerable period, and Kraepelin, Ziehen and Ballet and Blocq all admit that it may be the first noticeable symptom. Oppenheim, however, speaks of atrophy as a not infrequent precursor of the disease. This, however, seems rather an exaggerated statement, since Meynert, in his experience, could cite only three cases, all of which began as tabes, and Gudden found the atrophy as a distinct precursor of the disease in only one of his 65 cases of atrophy.

In view of the comparative rarity of optic atrophy as a precursor of general paralysis, it seems well to report certain cases in which the first striking symptom was a disturbance of vision due to gray atrophy of the optic nerves. In many cases of general paralysis there may be lesser changes in the retina in the form of a chronic retinitis and slight changes in the nerves themselves in the form of incipient atrophy, such as have been described by Oliver and studied anatomically by Colluci, and these lesser changes have been thought by Hepburn to be of much importance as an early symptom, preceding the disease by one to three years. Such minor changes, however, need not be considered here. In these cases there was nearly complete blindness, with very marked changes in the optic nerves, so great as to be readily discoverable by the tyro in ophthalmoscopy.

Optic atrophy when it occurs in tabes is usually a symptom not only of the first stage of the disease but of the early years of the disease. In six out of Leimbach's 27 cases of atrophy in tabes it was the initial symptom, and I have myself seen it precede the loss of knee-jerk. It is, therefore, evident that in those cases where tabes precedes paralysis, if optic atrophy be an early symptom, the atrophy must be ascribed to tabes rather than to paralysis, as in Meynert's three cases just cited.—*Vide Boston Medical and Surgical Journal*, Vol. CXL. No. 1.

PERSISTENCE OF LIFE.—*The North American Practitioner* makes the following reference to a contribution on this subject by Sir Dyce Duckworth, of London, in the Section of Medicine, at the late meeting of the International Congress at Moscow:

The first case was that of a girl, aged 14 years, suffering from suppurating otitis followed by cervical abscess, in which respiration ceased entirely four hours before the circulation was arrested, although artificial respiration was kept up during all that period.

The second case, that of a woman, aged 21 years, and suffering from otitis with headache, had sudden cessation of respiration. Trephining was at once performed and a quantity of pus was liberated. Artificial respiration and oxygen were employed, under the influence of which the pulse rallied a little, and finally ceased four and a half hours after respiration had been suspended.

The third case was that of a postal clerk, 26 years of age, who suffered from hemiplegia, the result of a blow upon the head. Trephining and incision of the dura mater liberated a quantity of blood, but the respiration ceased and it was found impossible to re-establish it. The heart continued to beat five hours after the cessation of respiration.

These observations accord with those of a number of other clinical observers. In this connection Professor Horsely states that, in case of cerebral tumors, hemorrhage and inflammatory foci, death may suddenly supervene through the arrest of respiration, and that in cases of seeming death as a result of injury to the head the condition is due to the arrest of respiration rather than to cardiac collapse, as has been generally supposed.

Dr. Duckworth, in explanation of these phenomena, refers to the fact that the centers of respiration and of circulation are located in close proximity. Obviously the former is by far the more sensitive of the two, and that where both centers are involved in the same lesion the respiratory center is the first one to give out. It is the first of all the

great nerve centers to show the effects intra-cerebral pressure. The clinical deductions which he would draw from these facts were, first, to reduce excessive intra-cranial pressure by trephining and probing; second, to maintain artificial respiration as long as it is indicated, either until normal respiration has been established or until the heart has ceased to beat.

BRACHIALGIA OR BRACHIAL NEURALGIAS.—After eliminating the cases of brachialgia due to rheumatism, myositis, inflammation of the synovial sheaths, an affection of the bones or joints, or to peripheral traumatism, Oppenheim has (*Jour. Amer. Med. Assoc.*, Vol. —) still 189 cases to consider. In 15 there was a vertebral or medullary affection (caries, tumor, tabes, glioma) with pain in a single arm. In 30 cases there was an evident neuritis with paralysis and anesthesia either of an infective or toxic nature; in 6 cases it was consecutive to influenza. Others were caused by the pressure of a tumor (aneurism of the sub-clavicular sarcoma). In 12 cases it was impossible to distinguish between neuralgia, neuritis, myalgia or some other lesion, and in 22 cases there was neuralgia without a neuritis or lesion of the central nervous system, evidently due to diabetes, gout, alcoholism or an acute affection. In 14 cases the pain was only induced by an effort. In the principal group, including 96 cases, there was a brachialgia proper, with no points distinctly painful to pressure, but rather a psychalgia consecutive to hysteria, neurasthenia, hypochondria melancholia. The cases were chiefly in men and the pain varied with the psychic condition. In some cases the brachialgia was associated with scolioses. These brachialgias had developed after a traumatism. In some cases they could be attributed to masturbation, more often to rebellious insomnia. The pain in these cases yields to suggestion. In one patient, who had in vain tried nearly every kind of treatment, it yielded to a single injection of antipyrin. Several cases relapsed or resisted all therapeusis. Brachialgia should be carefully differentiated from brachial neuralgia.

ERYTHOMELAGIA.—*The Journal American Medical Association* notes that Dr. Rost, assistant to Professor Oswald, at the Augusta Hospital, Berlin, recently presented a case of this rare disease at the *Verein fur Innere Medicin*. As he has been able to find only some 40 cases of it altogether in the literature, each case is of special interest, it aroused a good deal of attention and was carefully observed by most of those present. The opinion expressed by Dr. Rost, which seems to be that generally held by the internists, is that of Dehio: He considers it an independent disease and due to a state of irritation of the cells of the anterior horns at certain levels in the cord. Some time ago a series of articles from Vienna claimed that it was a symptom-complex with intimate relations with such other affections as Raynaud's disease and the neurotic edemas. This view does not seem to meet with much favor in Germany.

PULMONARY FORMS OF HYSTERIA IN MEN.—Laurent (*Indepen. Med., Medicine*) says this particular group of hysterical symptoms occurring in women has been well studied by Tostivint ("Contribution a l'étude de l'hystérie pulmonaire," *These de Paris*, 1898), but published cases of this form of male hysteria are rare. The author recorded three cases some years ago (*L'Encephale*, 1889), and he now adds several culled from the literature, with some general comments.

In some cases the pulmonary manifestations are simply incident to a general hysterical attack with convulsions and constitute a minor element of the seizure. For instance, one patient at the beginning and again at the height of an attack, characterized by violent convulsions and vivid hallucinations, would always expel several mouthfuls of blood, which apparently came from the pulmonary tract, and without effort or strangulation. In such a case the hemoptysis could scarcely give rise to diagnostic difficulty and would be of interest only as one of the many almost unexplainable manifestations of grave hysteria.

In some instances, however, when the pulmonary symptoms have opened the scene and the more usual signs of

hysteria have developed later, serious mistakes in diagnosis have been made by competent observers, and like errors will probably occur again. Debove (*L'Union Medicale*, January, 1883), has described a case of hysterical pulmonary congestion which deceived a member of the Paris faculty, who thought it a case of tuberculosis. Indeed, the correct diagnosis seems to have been made only on the disappearance of all pulmonary signs and the discovery of a complete hemi-anesthesia. In like manner a young man whose case is reported by Roulin was thought to be tuberculous on account of cough, numerous hemorrhages, etc., until the appearance of hysterical convulsions and a recovery as unexpected as it was sudden made the diagnosis easy.

The hemorrhages of hysteria are generally more frequent than those of a tuberculous lung and may occur at regular intervals, but like the latter they may be merely blood-streaked sputa or pure blood. In the hysterical cases the blood may be delivered with an abandon that is foreign to the habits of phthisical patients; bedding, clothing, walls and floors may be freely bespattered. In the majority of cases the cough is the well-known hysterical cough—dry, irregular, apt to be rhythmical or periodical, paroxysmal and without expectoration. Although physical examination may reveal some dullness on percussion, rude respiration, and numerous râles, these signs contrast with those of organic disease by their variability and fugacity. From day to day they may change in location and intensity or disappear altogether, and Debove has noticed that when hemi-anesthesia is present, the pulmonary signs are limited to or predominate upon the anesthetic side. Like the cough, the dyspnea of hysteria is peculiarly distinctive. It is not a true dyspnea, but rather a polypnea, and consequently is never attended with cyanosis. Strikingly characteristic of the hysterical affections, when present, are the painful points. They are usually situated in the intercostal spaces, in the supraclavicular or infraclavicular fossæ, or the supraspinous or infraspinous regions, and are not only painful but also exquisitely hyperesthetic, the slightest pressure being intensely painful. The constitutional symptoms of

phthisis are wanting. Fever is conspicuous by its absence, and in spite of profuse night sweats and abundant hemorrhages the patient does not emaciate.

Finally, as Tostivint has insisted, it should not be forgotten that a tuberculous patient may have hysteria and a hysterical subject contract tuberculosis. As this author sententiously but rather inaccurately puts it, "there is a pseudo-hysteria of the phthisical as well as a pseudo-phthisis of the hysterical."—*Medical Review*.

THE POSSIBLE CONNECTION BETWEEN THE NEURON AND SHOCK.—As a result of the discoveries of Ramon y Cajal, Waldeyer, Lenhossek and others, we know that the old idea of the division of the nervous system into gray or vesicular and white or fibrous can no longer be entertained. In its place we learn that this system is made up of a vast number of units, which have been named neurons by Waldeyer.

Each neuron represents a single body cell and is structurally and consequently physiologically independent of the other neurons. As they are body cells just as much as epithelial cells or muscle cells, they possess protoplasmic cell contents and a nucleus the same as other varieties of cells. In addition, they are divided into several parts, (1) the nerve cell, which sends out from it (2) the protoplasmic processes or, as they are now called, dendrites, and (3) the axis cylinder or axon. The axon finally splits up into many fine fibers (4), which are in relation with those from another fiber and are called end brushes, end arborizations or end arbs for short. As before stated, the neurons are independent units and neither the cells nor the processes join except by contiguity. As Cajal expresses it, "The currents are transmitted from one cell to another by contiguity or contact, as in the joining of two telegraph wires."

This contact takes place between the end brushes of one neuron and those of its neighbor. In the higher animals it seems probable that more than one neuron is required for the conducting parts, so they are superimposed

on each other. The terminal ends of the adjacent fibers inosculate with each other, forming somewhat of a network, but without actually joining.

Some years ago, in 1890, Rabl-Rückhard suggested that the neurons were not fixed but were capable of amœboid movements. This theory which was announced independently by Duval of Paris and Dercum of Philadelphia, opens up fascinating probabilities. Thus sleep is explained by Dercum as follows: "Sleep, instead of resulting from brain anæmia or some other apocryphal condition of the circulation, merely means that when the substance of the cortical cell has been diminished by activity, there comes a time when the processes are retracted so that the neurons no longer stand in active relation to each other. Interchange of action cannot take place; unconsciousness follows; sleep is established. Spontaneous wakening merely means that after nutrition has reached a certain point, a point where the wasted cell has been replenished, extension of cell processes again takes place and interchange of active functional relation is re-established.

The same theory would hold good for memory and many other states and conditions. There is no need of pursuing the subject any further at present, but the practical application of the hypothesis lies in the possibility that in shock the same conditions may obtain. Through the psychic or physical violence, the end brushes of the neurons withdraw from each other, the nerve conducting parts are temporarily interrupted, and we have the clinical phenomena of shock resulting. After appropriate treatment, or from rest, the separated end brushes come into contact again, the vital phenomena are re-established and we say the patient has recovered from his shock.—*The Railway Surgeon.*

PROTECTIVE ACTION OF THE LIVER AGAINST MICROBES.—Rogers (*Sem. Méd.* Oct. 19, 1898) describes recent results on the subject (Paris Society of Biology). In 1897 he found that certain cultures of the anthrax bacillus introduced into a branch of the portal vein did not

kill rabbits, whereas cultures of the same virulence injected into other blood-vessels did cause death. He then found that the lungs possessed a protective action against the streptococcus, while the liver possessed none. The staphylococcus aureus grows rapidly in the brain, but, like the anthrax bacillus, is destroyed by the liver. The liver seems to be powerless against the bacillus coli, and even to favor the growth of this microbe. Both the liver and the kidney arrest the growth of *oidium albicans*.

Recently Rogers has made further experiments on rabbits to determine what conditions modify the protective action of the liver. This protective action is less marked when the animal is kept without food, but remains observable even after three days of fasting. If three-fourths c.c. of sterilized culture of *bacillus prodigiosus* is injected into an intestinal vein, the liver loses all its protective power against *staphylococcus aurens*.

Large doses of glucose, given by the mouth, weaken the protective power of the liver, whereas small doses increase it. The effect of ether is most striking: 5 drops of ether injected into the portal vein, or 2 c.c. given by the mouth abolish the protective action of the liver, whereas small doses by the mouth—2 or 3 c.c. of a solution of ether in alcohol and water—increase it. When the ether is injected subcutaneously, its effect is much less marked. Perhaps the beneficial action of potions containing ether, in the case of patients with infectious diseases, may be explained on the supposition that dilute doses of ether given in this way increase the protective action of the hepatic cells against certain microbes.—*British Medical Journal*, Nov. 26, 1898.

A LONG FAST.—A. D. Hendrickson has lived thirty-five days without food.—The daily press of January 6th, gives account of a man at Janesville, Wisconsin, who has partaken of no food for the past thirty-five days. He is A. D. Hendrickson, for sixteen years Superintendent of the State Industrial School, and he is suffering as the result of a stroke of paralysis. Since December 1st, nothing but

water has passed his lips. Although he is in no immediate danger of dying of starvation, he is fast failing.

BRAIN CELL CHANGES IN ACUTE ALCOHOLISM.—The *Medical News* abstracts a paper of Dr. Charles L. Dana, reported to the New York Neurological Society, referring to ten cases, and giving the results of his studies thereon. Dana stated that what was ordinarily known as acute alcoholic meningitis, was not meningitis, though the patients died with all the symptoms of meningitis. The autopsies revealed simple cerebral congestion and edema, and the microscope showed little if any migration of leucocytes or anything like encephalitis. In some cases, vascular activity was not observed. He maintained that alcoholic meningitis is not primarily a vascular disorder, but a slow poisoning; hence, we must study the cell to determine the changes produced. It has been stated by some investigators that all forms of cell degeneration are the same, and that it is impossible, as Nissl claimed, to make out different cell degenerations in accordance with the particular pathologic irritant. The microscopic appearances are different in different cases of alcoholic meningitis, and in other cases associated with delirium and acute disorder prior to death. There is one type of degeneration quite characteristic of those dying from sunstroke, with intense delirium and very high fever. It is a distinct and general pigmentation, involving the larger cells. This sudden development of pigmentary degeneration would seem to be characteristic of acute febrile degeneration, associated with acute toxemia. Another kind of pigmentary cell degeneration was found in a case of pernicious anemia. Here, the pigmentation involved both the small and large cells. In a case of prolonged use of morphine and whisky, in which death was due to exhaustion and malnutrition, the brain showed quite a general atrophy of both the nuclei and the cell bodies. There are three types of cell degeneration, viz.: (1) Intense pigmentation of the larger cells, chiefly with degeneration of the cytoplasm; (2) a general cell atrophy of the body and nucleus, and (3) a good deal of change in the cell-body,

with many neuroglia nuclei in the pericellular spaces. In the case of alcoholism and alcoholic meningitis, it was not possible to make out a distinct type of cell degeneration, nor could this be expected, as these patients die not so much from the alcohol as from autotoxemias, and from the febrile process.—*Medical News*.

THE OCULAR EVIDENCES OF HYSTERIA.—According to Dr. C. A. Wood (*Am. Jour. Med. Science*, CXVII., No. 1, p. 42), are:

Reversal of the relation of the color-fields and the field for white, the tonic form of blepharospasm, spasm of accommodation and convergence, and pseudo-paralytic ptosis.

Defects of vision (in the absence of refractive errors, accommodative anomalies, and fundus lesions), if accompanied by photophobia and any form of blepharospasm.

Where there is no conclusive external evidence of the neurosis present, the perimeter should be carefully used, the range of accommodation should be noted, and the ophthalmoscope employed.

RELATION OF PELVIC DISORDER TO MENTAL DISEASE.—C. K. Clark, medical superintendent of the Hospital for the Insane, Rockwood, Kingston, Ontario (*Albany Medical Annals*, January, 1899), states that for some time in that Province a war has been waged on the subject of gynecological operations as a cure for insanity. The enthusiasts, on one side, claim that practically all insane women have pelvic disease; the opponents of this theory insist that pelvic disease is an unimportant factor in the development of insanity. His experience has been that it exists in a small proportion of patients, and of those in whom it does exist a majority do not require surgical aid. In those upon whom he has operated surgical results have been excellent, but the result upon the mental condition has been generally disappointing and in some instances harmful. Pelvic disease no doubt accounts for a small proportion of cases of insanity, and when it exists should receive appropriate treatment.

Clark quotes with approval the conclusions set forth in an editorial in the *Journal of Mental Science* for July, 1897: "We have nothing to say against operations of any kind being performed on the insane, for just the same reasons that make operations on the sane advisable or necessary, but we protest against the removal of uterine appendages for any other reason. The day of indirect treatment for mental and moral deficiencies by heroic operations has gone by. Attempts in this direction have been made from time to time, but comprehensive psychology and good sense have hitherto triumphed and will continue to do so."

ARTERIO-SCLEROSIS OF THE BRAIN.—On this subject the *Medical Chronicle* reproduces an article from Kovalevsky (*Neurol. Centralblatt*, No. 15, 1898).

Kovalevsky says: "Grasset ('Du vertige cardio-vasculaire, ou vertige des artério scléreux,' 1890), when speaking of chronic vertigo, recognises certain forms—the epileptic form, the sensorial form, or Menière's disease, the digestive form, and the cardio-vascular form or the vertigo due to arterio-sclerosis. The vertigo in the latter is either simple or accompanied by epileptiform fainting attacks. One of Grasset's patients had a pulse of 25-30 per minute, and, when the pulse became still slower, the patient had an attack of syncope. According to Grasset, the symptoms are caused by arterio-sclerosis of the vessels of the medulla oblongata.

"Mendel ("Über den Schwindel," *Berlin Klin. Wochensch.*, 1895) also looks upon vertigo as an early sign of arterio-sclerosis, and recommends prolonged use of iodide of potassium and ergotin.

"Regis ("Neurasthenie et artério-sclérose," *Presse Méd.*, 1896) draws attention to the frequent occurrence of neurasthenia in arterio-sclerotic patients, even at a time when there is as yet no very marked arterio-sclerosis, noises in the ear, vertigo, disturbances of the vascular system, and bladder troubles being the most prominent symptoms. Probably both the neurasthenia and arterio-sclerosis are in these

cases due to the same cause—namely, to the disturbances in the nutrition.

"Hutchings (*State Hospitals' Bulletin*, 1896) looks upon the nervous symptoms noticed in arterio-sclerosis as due to disturbance in the nutrition of the ganglia-cells, caused by the thickening of the walls of the blood-vessels; hence the prominent symptoms are diminution of the mental activity, vertigo, attacks of syncope, and disturbances of speech. To recognize the early stage of arterio-sclerosis the aorta and the eyes should be carefully examined.

"Lapinski (*Wratsch*, 1896) examined the large vessels of the base of the brain, and also the capillaries, and found the capillaries often affected with cloudy or granular degeneration.

"Beyer (*Centralb. f. Nervenheilk.*, 1896) describes some cases of arterio-sclerosis which resembled general paralysis. The disease occurs between the ages 50—55, and commences with an attack of apoplexy, hence he calls it dementia apoplectia, and it differs from general paralysis by the attacks of dementia occurring at separate stages.

"Arnaud (*Gaz hebdom.*, 1897) draws special attention to the similarity of the symptoms of arterio-sclerosis and general paralysis."

The writer gives three cases of his own, which were benefited by iodides, heart tonics and sodium preparations and concludes by discountenancing Rumpf's treatment and milk diet.

ALCOHOLIC SOMNAMBULISM.—Dr. Francotte, of Liège, has published a carefully prepared paper, having special reference to the medico-legal relations of the somnambulism which is met with as a result of alcoholism. Somnambulism, regarded as the condition in which, during loss of consciousness, co-ordinated actions are carried out, of which there is no recollection afterward, is met with not only in hysteria, epilepsy, and the hypnotic state, but also as a result of alcoholic indulgence. The author relates the following case of a man who was arrested for disorderly conduct in a public place. He could not be induced to answer questions or even to speak, and appeared to be quite demented. There was

no sign of intoxication, but next morning at the medical examination, he confessed that at a place far distant from that at which he had been arrested, he had imbibed a large quantity of alcohol. He had completely lost recollection of what had occurred during the next forty-eight hours. He confessed to other excesses in alcohol, and there was marked tremor of the hands and of the tongue. A sister had been the subject of mental disease. The author, after citing several examples, concludes that there is a species of alcoholic somnambulism in which the patient behaves to all appearance in a normal way, but without consciousness, or at least without having any recollection of what he has done. In reality, however, during such a time, certain slight peculiarities of conduct are present which may easily escape the observer. The condition manifests itself only in degenerate individuals, or at least in those who have inherited some psychic weakness, and as it is one which implies the absence of responsibility, unless it is intentionally induced, it is of great medico-legal importance.—*Neurologisches Centralblatt.* (*Journal of Inebriety.*)

Dr. Legrain, physician to the insane asylum in the department of Seine, has made an extended study of alcoholic heredity, from which he formulates the following conclusions: 1. Double parental alcoholism creates an irresistible tendency to drinking in the children. 2. Parental absinthism seems to transmit epilepsy directly to the offspring. 3. The parental combination of absinthe drinking and epilepsy is a common cause of epilepsy in the children.—*Journal of Inebriety.*

SKIN DEGENERACIES IN INSANITY.—The *Journal of Mental Science* (Dec. 1898) reports the following case: A patient in the Northhampton (England) insane hospital is a perfectly happy, merry and well-behaved old man who believes that he has some claim to the throne of England, and is content to await the public recognition which he is persuaded will not long be denied him. There is some reason to state that he has always been of an eccentric and singular turn of mind. Such interest as may attach to his case

is due rather to his cutaneous than his mental eccentricities. The whole of this man's skin is thickly studded with warts sessile and pedunculated and with little naevoid growths. His ears are long and narrow with the satyr point well marked, and with an abundant growth on the inner surface of each tragus. On the posterior fold of the left axilla is a well formed mamma about the size of a pigeon's egg and presenting a well developed virginal nipple. Over the sacrum and the lower part of the lumbar curve is that localized growth of abundant and coarse hair, so often associated with spina bifida occulta, and so frequently presented in conventionalized form on classical statues of fawns and satyrs. On the knee and elbow are patches of inveterate psoriasis, a disease from which he has suffered throughout life. The palatal arch is wide and flattened out, and the whole facial expression irresistibly suggests that of a kindly, humorous old satyr. When noticing, as in this case; the correlation of the insane diathesis with cutaneous abnormalities, one cannot forget that the central nervous system is, no less than the skin and its appendages, of epiblastic origin. This is, therefore, rational justification for acceptance of the clinical teaching that cutaneous abnormalities frequently indicate the "insane diathesis."

CHANGES WHICH GENERAL PARESIS HAS UNDERGONE IN THE LAST TEN YEARS.—Mendel, in the *Neurologisches Centralblatt*, vol. xvii., 1898, p. 1,035, (*Medical Record*, March 18) recurs to this subject, which has been receiving some attention of recent years. From many sides it would appear that some change in the clinical picture is apparent. The present author believes that, as a rule, *general paresis with simple advancing dementia is more commonly found now than formerly, and that cases with great impulsiveness and delusions of grandeur are fewer*. His statistics show that in and about the year 1880 the typical cases observed were fifty-five in number out of one hundred and eighty instances, while in 1898, of one hundred and ninety-four cases observed, only twenty-four were of the classical type. In 1880 only thirty-seven dementia cases were ob-

served, whereas in 1898 there were seventy of this kind. He also finds that remissions are commoner now than formerly, and also that the disease is, if anything, on the increase, in which particular its increase among women is to be noted, the proportion in his cases being four to one. General paresis in husband and wife is commented upon as well as the occurrence of paresis and tabes. Thus, in seven cases both had paresis; in six, paresis appeared in the husband and tabes in the wife; in three, tabes in the husband and paresis in the wife; in four, tabes in both husband and wife were found. The author suggests that a change in the syphilitic virus might account for the variation in the type, and that some sort of a change in the virus has taken place is held by prominent syphilographers.

We italicize a feature of this malady which has come so markedly under our observation of late years that we no longer look for either grandiose delusion in established paresis as specially diagnostic. The feeling of bonhomie, however, is distinctive after the melancholic period has passed, when it constitutes a feature.

DIETETIC TREATMENT OF ARTERIO-SCLEROSIS.—
The proper quantity, particularly also quality of food are to be considered. The food must produce no irritation of the vessels by accumulation of deleterious products of metabolism (leucomains, ptomains) or through nucleo-albumin in certain kinds of meat. The production of gas by decomposition in the intestines must not be excessive. White meat, veal, chicken, lean ham, lamb, well-cooked beef, lime-containing substances which possess a minimum of albumin, such as lung, liver, spleen, kidney, soft cartilages of young animals, the gums of oxen. Spinach, cauliflower, fresh string-beans, sprouts. The least gas-making substances. Leguminous substances are to be avoided. Albumin in non-voluminous artificial preparations, sugar, eggs, and soups of medium strength, compotes. Sweet, sour or buttermilk. A moderate amount of food only, at any one time, frequently administered. Patient should never altogether satisfy his hunger. Strong coffee and tea are absolutely prohibited. Small

quantities of Moselle or red wine are sometimes permissible. Fresh well-water and mineral waters that contain a minimum of carbon dioxide, or such as produce an increased excretion of urates (alkaline water, Vichy, Fachinger) are allowed. Eating and drinking must be distinctly separated; only in exceptional instances is it permissible to take any fluid during the meal, and the consumption of fluids must be carefully regulated in such a way that for two days all the fluids (water, beer, wine, coffee, soup, etc.) and the corresponding excretion of urine are measured. The smaller sum is subtracted from the larger, and the remainder represents how much more fluid the organism retains or excretes in excess of that which was administered. In advanced arterio-sclerosis, the evening meal must be very much diminished and taken rather early; no more than a plate of soup with one or two eggs, or a small piece of meat with a roll is advisable. In obesity, fats and carbo-hydrates must be diminished. Exercise is important in the treatment; walking and climbing and passive gymnastics (Zander's apparatus). In walking the patient must inspire and expire regularly. Movements must never be carried out when the stomach is filled. After his meal the patient is to rest from half an hour to an hour; smoking and sleeping are not allowed. For summer resorts, the mountains for early cases, the seaside for advanced; Italy in the spring, North or East Sea in the summer, Abruzzo in the fall, and Egypt in the winter. The baths of Wildbad, Baden-Baden, Teplitz, and in severe cases the carbon dioxide baths of Nauheim and Marienbad work very favorably. Bicycle permissible only in the very earliest stages. All mental and physical exertion, as well as excitement (especially sexual) are to be avoided.—Abstracted.—Dr. H. Bock (*Zeitsch. f. diat. u. physik. Therap.* ii.; *Deutsche med. Zeit.*, January 19, 1899).

The above epitome of Dr. Bock's rules are punctiliously precise. The average old person will not observe them. The ordinary old man or woman whom nature has predestined to longevity generally modifies dietary habits to comport with his advancing years. The octogenarians and nonagenarians who have fallen under our observation have

been fairly good eaters and excellent sleepers; fond of game, poultry, and bread and milk, and moderating their dietary in simplicity with advancing years.

An aged person is as old as his arteries are, according to Virchow, but the arteries conform to the remaining vitality and longevity. We know of several nonogenarians, and one centenarian, whose dietary was chiefly eggs, milk, bread, and lean meats. All slept well and lived much in the open air. The problem of arterio-sclerosis and consequent longevity is not altogether to be solved in the dietary.

PSYCHIATRY.

JUVENILE PARETIC DEMENTIA.—Dr. A. Helen Boyle, of Brighton, England, reports (*Journal of Mental Science*, January, 1899,) a case of paretic dementia in an undeveloped nineteen-year-old girl, which presents the following points of interest: The age of the patient. She began to show signs of the illness at about fourteen or soon after. Although there has been a certain number recorded as beginning near or at puberty, these are still uncommon compared with the immense number of adult cases. The causation is very obscure. Phthisis in the family history possibly predisposes to mental trouble. The only other possibility is congenital syphilis which, in absence of definite history, is suggested by the fact of the first and second of the family dying very soon after birth, the second living just a little longer than the first; no recurrence of similar incidents throughout a large family, and also that the patient's teeth had imperfect enamel, though this again may be explained by the teething powders used which may have been mercurial. There is no traumatic or nervous history, no worry or real over-work. The relation between incontinence of urine and faeces and the seizures, her habits in this respect improving during the months she had the attacks. The apparent intimate connection between pubescence and illness. The symptoms supervened at the most usual time for the appearance of menstruation which in her case was then absent. The first signs of the catamenia

were ushered in by a severe convulsive attack, which was thereafter relieved and partially recovered from as soon as the period began, although she died a few days later. Out of five cases of juvenile paretic dementia in females, recorded by Wiglesworth and Clouston, four of them never menstruated at all, and the fifth either not at all or scantily. In only four of a total number of twenty-nine girls suffering from this malady, was it recorded as having occurred, and then only before and not during the course of the disease. Metabolism at puberty is certainly profoundly affected by ovarian activity which, with the prospect of pregnancy, results in a habit of producing material not required for celibate life, and probably even deleterious. This may be excreted normally as the catamenia. Under the conditions of pregnancy this material is retained, or one might say, perhaps more truly, excreted in another way, being required for the growth and development of the foetus. If one may put it thus, the ovary has several functions, to produce ovules, to modify metabolism, to excrete what is not required directly or indirectly. These last two functions are probably carried out by reflex nervous action, and possibly also by an internal secretion, (for ovarian substance is said to be a powerful drug, causing rise of temperature) acting in chlorosis as an emmenagogue and increasing the haemoglobin and red corpuscles in the blood, and the theory advanced for its use is that chlorosis is a neurosis acting through changes in the internal secretion of the ovary. Dr. Boyle suggests that it is possible, in the case of this patient, that the constitutional taints modified the ovarian secretions so that a toxæmia occurred, either owing to the altered secretion itself or some by-product of the altered nutrition which should have been excreted in the usual way. In the fact that to the end the general nutrition was fairly good, this patient differed from most of the recorded cases in which emaciation was very marked.

ART IN THE INSANE.—Within the last decade, several contributions have been made to this subject. An extended summary of the earliest appeared in the ALIENIST AND NEUROLOGIST in 1892. Since that time Simon has dis-

cussed the subject. The latest contribution is that of Hevdlicka (*American Journal of Insanity*, January, 1899,) who states: The general standard of any of the arts in particular, or of all of them taken together, is, among the mentally abnormal of all classes, rather below. It is throughout inferior to the standard of which the same persons were capable while in a normal state of mind, or to that which obtains in equal numbers of mentally normal persons born and brought up in approximately similar social conditions.

The inferiority of the art standard must be considered separately in the feeble-minded, as it is of a different origin in these than in the insane, the epileptics and the insane criminals. The art standard among the feeble-minded, the lighter grades of these only being considered, corresponds in a certain proportion to the kind and the amount of training these parents have received. This proportion is inferior to that which can be obtained under similar circumstances with normal individuals. The abnormal condition of the mind of the insane and that of the epileptic has generally caused a deterioration of the previous art capabilities of these individuals. In no case authentically known to Hevdlicka have these diseases of the brain been observed to arouse a new art talent or to highly elevate the previous art standard of the individual. There may, however, occur in these diseases prolonged impulses to production in some one direction or due to the patients having more time some of their dormant abilities may develop themselves to a certain degree. In consequence of the above facts, insanity in any of its forms and equally epilepsy may be considered as being generally more or less detrimental and unfavorable to those mental qualities which are concerned in the exercise of any form of art.

LUCCHENI'S END.—The end of Luccheni, the murderer of the late Empress of Austria, is just what might have been expected. His vanity and egotism vanish as soon as he is deprived of the gratification of displaying himself. He becomes the hysterico-epileptoid imbecile of the criminal anthropotomist. The Italian journals describe him as wan, dejected and prostrate, and deplored his crime. Vanity

seems to be the impelling motive in the acts of anarchists, and wherever this sentiment is pathologically developed the subject of it should be carefully watched. The most dangerous cranks can be recognized by their supreme *amour propre*.—Mann, *Editorial Notes in Medical Age*.

NEUROTHERAPY.

SPLENIC EXTRACT IN INSANITY.—Drs. Kerr and Bois of Hartwood, England, at the last meeting of the British Medical Association, reported twenty-two cases of insanity treated with splenic extract. Recovery occurred in eight, and physical improvement in seventeen. The cases most tractable to treatment were those of stuporous insanity occurring during adolescence.

TUBERCULIN IN PHTHISIS OF THE INSANE.—Dr. I. H. Neff concludes from an analysis of twenty cases (*Amer. Jour. of Insanity*, 1899): Tuberculin is a reliable and safe diagnostic agent. Securing a normal preliminary temperature is essential, and preliminary temperature records of at least forty-eight hours should be secured. In order to detect fluctuation in temperature after injection a systematic temperature record should be kept. Considering our present knowledge of the action of tuberculin, a rise of less than two degrees Fahr., while it may be strongly suggestive is not conclusive and should not be accepted as an evidence of reaction. Although the reaction generally occurs in from eight to fifteen hours after injection, twenty hours may elapse before the maximum temperature is reached. Secondary rises in temperature are not uncommon, and oscillations in temperature may be noted for some hours. An initial dose of two milligrams of tuberculin is recommended. If reaction is not secured or is not satisfactory a second or third injection of four and six milligrams respectively should be used. The test is only applicable to cases where the temperature curve is regular and is contra-indicated in cases where there is an irregular oscillation in temperature. The use of tuberculin for diagnosis offers special advantage to hospitals for the

insane. Subjective symptoms in case of insanity are often difficult to obtain, and a physical sputum and other examinations may be unsatisfactory. In these cases tuberculin may prove invaluable.

AXIAL FIBRES IN THE BRAIN.—Dr. Paul Flechsig arrives (*Jour. of Ment. Science*, Jan., 1899), at the following conclusions: The development of axis-cylinders in the lobes of the brain follows the same law and time of growth as in the spinal cord, the medulla, the cerebellum and the middle brain. Flechsig observes that the processes have a regular course, and not random as sometimes stated, owing to faulty preparation and inability to follow the complicated course of the nerve-fibres. Nerve-fibres having the same functions get their axis-bands about the same time, whereas dissimilar systems have their own times. But it is to be borne in mind that collateral fibres attain their full growth later than those of the main stem. From which it follows that systems of fibres which are separated in their development by considerable intervals of time cannot fulfill the same special functions. Examples of this are the radiating fibres of the second parietal gyrus and the posterior median gyrus of about three months. The fundamental law comes out most clearly in prematurely born children which have survived for some time, as for example in the seven months child who has lived for one or two months. In these cases the anatomical character of the nerve fibres is more apparent than in embryos arrived at the full time. The new formation in the cerebral lobes begins from two and a half to three months before normal mature births. The first system to appear are the radiation of the fillet, the olfactory tract and the sensory conducting tracts. Scattered axial fibres do not occur in the cerebral lobes. The development of the axis-bands progresses in distinct places; the intervening spaces are clear of these axis-bands. To hold that the association fibres are developed at the same time as the projection or conducting fibres is the result of faulty observation. The cortex becomes developed in a great number of zones. Every tract is distinguished by the particular time in which the nerve fibres are developed and

has its leading connection certain peculiarities; the number of these fields is far greater than he at first recognized, the differentiation of the cortex is much finer and distinctions in the localization are much more numerous. He now distinguishes forty fields of historical development while before he could only make out nine (five sensory and four association centers). The increase is principally owing to a further dissection of the association centers and the discovery of two more sensory centers.

MEDICATION THYROIDIENNE ET ARSENIC (THYROID MEDICATION AND ARSENIC). Bédart and Mabille (*Comptes rendus de la Soc. de Biologie*, 1898, p. 556) discuss this subject. Mabille, in treating a patient with goitre, gave arsenic in addition to the thyroid medication, in order to avoid the bad effects of the latter. The excitement, palpitation of the heart and tremor disappeared quite rapidly under the influence of arsenic, but reappeared when the arsenic was discontinued and thyroid treatment employed alone. Bédart and Mabille report the results of their experiments on dogs and rabbits to determine the effects of the combined treatment. The fresh thyroid gland of the sheep and Fowler's solution were used. When the gland was administered alone, the cardiac pulsations increased very rapidly, reaching as high as 190; the animals presented manifestations of irritability after six or seven days and tremor developed. When arsenic and the thyroid gland were given together, the pulsations after a time decreased to 100 or even 90, became more normal in force and regularity, and phenomena of irritability and tremor were not present. Considerable decrease in body weight occurred in the dogs when thyroid alone was given, but the decrease was much less when arsenic was added.—*Spiller & McConnel, Ibid.*

THE STIGMATA OF NERVOUS SYPHILIS. Rothwell (*Jour. Amer. Med. Assoc.*, Nov. 19, 1898) considers some of the most common evidences of this condition. Localizing symptoms, similar to those produced by non-specific lesions, occur and have the same anatomical causes, the associated symptoms determining the real nature of the disease. He

regards the meninges and the blood-vessels of the convexity of the hemispheres and the base of the brain, especially about the cranial nerves, as the most vulnerable portions of the neuraxis. Lesions may be focal or diffuse, and the symptoms are both multiple and multiform. Exceptions are found, however, as, for instance, in the isolated loss of the iritic reflex to light. The symptoms are transitory in character when directly due to a specific process, but the results of secondary lesions, that is, necroses or degenerations, are usually permanent. In other words, a uniformly progressive course in a disease is a probable indication of its non-specific character. Among the stigmata, headache possibly holds first place. It is found in three-fourths of all cases of cerebral syphilis. It is intense and usually described as deep-seated and localized in a definite region. Exacerbations are common and are followed by remissions or intermissions. It is almost always worse at night, and is often accompanied by evidences of mental change. Insomnia is one of the early manifestations of the syphilitic disease, but may cease on the supervention of motor phenomena. Somnolency is also a prodrome of cerebral syphilis. Middle life seems to be the period in which these stigmata of nervous syphilis are most likely to become manifest.

THE VALUE OF HYDROCHLORIC ACID IN SCIATICA, ETC.—We stated how the value of hydrochloric acid in sciatica had been discovered in our first number (p. 41). The following confirmatory observations are of interest:—

R. A. Bayliss, M.R.C.S., L.R.C.P., writes (*Brit. Med. Jour.*, Nov. 19, p. 1550):—

Hydrochloric acid was applied over the course of the sciatic nerve or the heels and feet, for the relief of pain in these parts in 26 cases; 16 had sciatica, which, in most instances, had defied every other treatment. Of these, 2 were completely cured, 11 were considerably relieved, and 3 were not improved. The remaining 10 patients were suffering from intractable pain in the heels and plantar region, the sequelæ of acute rheumatism, many gonorrhœal. Of these, 4 were quite cured, 1 was very much relieved, and 5 were not improved. The average number of applications

was, for all the cases, 15. The duration of the treatment varied from one to five weeks. The strong acid of the *British Pharmacopæia* was painted on the skin at bedtime with a glass brush, in a series of lines about 2 or 3 inches long over the tender spots in the thigh and calf. When dry the limb was enveloped in cotton wool and loosely bandaged, and so left till the morning, when the patient was allowed to get up as usual. No vesication of the skin was produced and the application was not attended with any pain. The acid may be applied every night or every other night, according to the effect produced on the skin, but it should be discontinued directly there is any sign of redness or irritation of the parts.—*The Canada Lancet*.

IN LARYNGEAL COUGHS.—Dr. Walter M. Fleming (*Journal of Nervous and Mental Disease*) says, that in acute attacks of laryngeal or winter cough, tickling and irritability of larynx, Antikamnia and Codeine Tablets are exceedingly trustworthy. If the irritation or spasm prevails at night the patient should take a five grain tablet, containing $4\frac{3}{4}$ gr. Antikamnia and $\frac{3}{4}$ gr. Sulphate Codeine, an hour before retiring and repeat it hourly until the irritation is allayed. Allow the tablet to dissolve slowly in the mouth swallowing the saliva. After taking the second or third tablet the cough is usually under control, at least for that paroxysm and for the night. Should the irritation prevail in the morning or at midday, the same course of administration should be observed until subdued. In neuralgia, in short, for the multitude of nervous ailments, he doubts if there is another remedial agent so reliable, serviceable and satisfactory, and this, without establishing an exaction, requirement, or habit in the system, as morphine does.—*The New York Medical Journal*.

THE TREATMENT OF TETANUS BY BRAIN EXTRACT.
Dr. H. Schramm, docent in surgery at the Lemberg University, reports the following case (*Przeglad Lekarski*, January 21, 1899), which, so far as he is aware, is the second on record in which extract of brain has been applied as a therapeutic agent in the human being. The first one was published by Dr. Krokiewicz in *Noviny Lekarskie*. The pres-

ent case has the following history: On December 10th, there was brought to St. Zoffie Hospital H. L—, a girl, nine years old, who suffered from well-advanced traumatic tetanus. In the beginning chloral was used in two-gram doses per rectum, but it did not have the slightest effect on the tetanic contractions. The child had from fifteen to twenty attacks daily, but expectant treatment was continued on account of the fever being low (between 37° and 37.4° C.). At last, on the twelfth day from the beginning of the disease, the child became very much exhausted and the temperature went up to 40° C. The author decided to use brain extract. For that purpose he took fresh brain of a young rabbit, about eight to ten grams, freed from fat, washed it in freshly prepared physiological salt solution, macerated it thoroughly in an aseptically cleaned porcelain mortar, with the same quantity of physiological salt solution, which he afterward pressed through six layers of gauze sterilized by boiling in decinormal salt solution. The whole amount of extract he obtained amounted to about fifteen grams. He injected ten grams of this mixture, which contained from five to six grams of pure brain, into the left side of the chest, using always the most rigid antiseptic precautions. In the evening the temperature fell to 37.4° C., and the child became quieter, notwithstanding that chloral was not given. Next day the patient was able to open her mouth. On the third day after injection she became worse. The operator extracted in the same way as before ten grams of rabbit brain, and mixed it with twelve grams of decinormal salt solution after maceration and expression. He secured ten grams of fluid, this extract being stronger than that used before; this amount he injected into the right side of the child's chest. During the day the child had less frequent attacks and passed the night quietly. On the third day from the last injection the child was able to sit up in her bed. On the fourth day she got up. The sites of injection were painless and without any swelling. The author did not observe any bad effects from this treatment, and the injected fluid was rapidly absorbed. This case differs from that of Dr. Krokiewicz, in that in

the latter abscesses formed at the place of injection, which, he explains, were probably due to thicker particles of brain matter injected under the skin, and that he used calf's brain probably not very fresh and surely contaminated. Wassermann and Taky have shown that the brain of any warm-blooded animal, such as the dog, rabbit, etc., possesses antitoxic properties; therefore for therapeutic purposes any brain may be used, but best of all rabbit brain, for the reason that calf's brain removed by the butcher will always be contaminated and probably stale, while a rabbit can be easily procured and the brain removed under antiseptic precautions, so that it can be depended upon. On the ground taken by Wassermann and Taky, brain extract should be used in every infectious disease in which the nervous system is mostly affected, such as rabies (*rage*) and others. Dr. Borstein ("Über die antitoxischen Eigenschaften des Central Nerven-Systems," *Central blatt f. Bact. und Parasiten.*, xxiii., 4) has tried brain extract in diphtheria, but with negative result, probably because in this disease the nervous system is not very much affected.—*Medical Record*, February 25, 1899.

A VERY GRAVE ERROR.—Among those who have paid high tributes to the value of Antikamnia abroad are Dr. J. Acheson Wilkin and Dr. R. J. Blackham, practitioners of London. They have found it of value in the neuralgias and nervous headaches, resulting from over-work and prolonged mental strain, paroxysmal attacks of sciatica, brow-ague, painful menstruation, lagrippe and allied conditions. They think the doctor commits a grave error who fails to use it. Experience goes to prove that ten-grain doses of Antikamnia in an ounce of sherry wine, taken every two to four hours, will carry the patient through these painful periods with great satisfaction.—*Medical Reprints*, London, Eng.

HYDROCYANATE OF IRON (TILDEN'S) IN EPILEPSY.—Among the long list of remedies that chemical research has placed at the disposal of the physician for the treatment of epilepsy and the neuroses, there are few which can claim the title of being both safe and efficient. One of

the most prominent which is deserving of this designation is Hydrocyanate of Iron (Tilden's) a well known and long tried remedy concerning whose virtues in the diseases and conditions indicated there is absolute unanimity of expression among all observers and authors upon the subject. Of the class of cases in which it has proven particularly satisfactory and of especial service we would mention Epilepsy (petit and gran mal), Neurasthenia and Migraine, also valuable in neuralgic affections in general.

HEROIN, A NEW SUBSTITUTE FOR CODEINE.—Heroin is a diacetic acid ester of morphine, and, according to the investigations of Dreser and Floret, its dominant action is on respiration. The frequency of respiration is lessened, inspiration is prolonged and the volume of respiration is much increased under its influence; it augments the respiratory force. It inhibits metabolic processes, and kills by respiratory paralysis. Although the fatal dose of heroin is ten times larger than that of codeine, it acts on respiration ten times more powerfully, dose for dose, than does codeine. It is a valuable drug to check the cough due to irritation or inflammation in the respiratory tracts, as in bronchitis, pleuritis, and phthisis. It is insoluble, and so is best given in capsule or tablet form. The dose is 1-20 gr.-1-6 gr. It does not produce any of the disagreeable after effects which frequently follow the use of other opium preparations. Its influence on the respiratory system is somewhat prolonged, so that three daily doses are usually sufficient, and the dose does not have to be increased after it has been used for a short time.

It would seem to be a very valuable adjunct to our therapeutics of the respiratory system.—*E. A. Fletcher, Notes on Progress, Western Clinical Reporter.*

THE POISONOUS QUALITY OF CHEMICALLY PURE WATER.—It is a phenomenon which is well known to microscopists that cells of fresh animal tissues swell and become opaque when they are examined under the microscope in a medium of distilled water. This action of chemically pure water is one reason why a small amount (0.6 per cent) of chloride of sodium is added to the water which is

used for microscopic purposes. These changes in the cell are due to the fact that, in harmony with a well known natural law, some of the salts and other soluble constituents of the cell pass into the water. These constituents are necessary to the life of the cell which dies when they are withdrawn by the water. Distilled water is therefore a poison to the protoplasm of the cell. It is for this reason that physicians should warn their patients against drinking chemically pure water in any form. The at first sight paradoxical, but nevertheless perfectly correct statement, that water which is too pure, *i. e.*, chemically pure, is a poison, becomes at once plausible to the person who is practically familiar with the rudiments of histology and physiology. An action, similar to that observed under the microscope when chemically pure water comes in contact with isolated cells, or conglomerates of cells, takes place when it comes in contact with the epithelial layer of cells of the mucous membrane of the stomach, or any other mucous membrane. When distilled water enters the stomach the superficial layers of epithelial cells die and are thrown off. Recently Dr. Hans Koeppe has again called attention to this phenomenon in a paper entitled "Pure Water—Its Poisonous Action and Its Existence in Nature."¹ The author states that the poisonous action of "pure water" would have often been noticed in a much more pronounced measure were it not for the fact that even so called chemically pure water is usually not absolutely pure. Even recently prepared ordinary distilled water of the shops is in reality not pure water, and this is much more the case after such water has been standing in vessels which have not been well sealed and in apartments where chemicals are kept and gases of various description have access to the water. The most sensitive and best indicator of the degree of purity of water is its capacity of conducting electric currents. Admixtures of impurities that can not be detected in water by the most delicate chemical analysis are amenable to a quantitative estimation by the electric conductivity, and it is by the application of this test that the differences in im-

¹ Deutsche medicinische Wochenschrift, No. 39, 1898.

purity among various specimens of (from a chemical standpoint) pure waters are determined. The access of air alone and, after water has been kept for some time in a glass vessel, the infinitesimal quantity of glass dissolved by it increases its electric conductivity. The electric conducting power of the purest water which can be artificially produced with the aid of the most careful precautions has been calculated to be 0.0425. Carefully preserved ordinary distilled water in which the ordinary impurities as determined by chemical tests were absent was found by the author to possess an electric conductivity of 49.2. Water which is considered sufficiently pure for physico-chemical investigations has, according to Oswald, an electric conducting power 2.13. Three specimens of well water examined by Koeppe were found to possess an electric conducting power of 344.0, 654.0, 701.0; a 0.73 per cent solution of chloride of sodium has, according to Oswald, an electric conducting power of 11050.0. The figures express only the comparative conducting power (at 18° C.) and represent ohms multiplied by 10^{10} .

A consideration of the fact that chemically pure water has poisonous qualities is of practical importance to the physician who, for instance, wants to prescribe ice-pills for nausea and vomiting. It is, what would appear at first sight paradoxical, the artificial ice which has a greater electric conducting power, *i. e.*, is less pure, than the natural ice, and therefore less poisonous, in the above sense, than the latter. Artificial ice is less apt to cause a burning sensation in the stomach, nausea, vomiting and catarrh of the stomach, because it is less pure than natural ice, although it is made from distilled water. In the artificial ice all impurities of the water are contained in the ice, while ice as it occurs in nature where it forms in the upper portion of the water—the impurities sinking to the bottom—is relatively free from impurities and hence more poisonous with regard to its cell-destroying action. A still less objectionable ice for medicinal purposes would, of course, be obtained if a slight addition of chloride of sodium, say 0.60 per cent, or some other salts were added to the distilled

water before it is subjected to the artificial freezing process. Natural ice is relatively pure even if it is gathered from very impure water, and the water obtained in Koeppe's experiments by melting natural ice was purer than boiled distilled water; the electric conducting power of the former being 8.0, that of the latter 10.0 to 10.5. The ice of glaciers and mountain snow is particularly pure and its injurious effects are well known to mountain guides. The reason that pure ice is not offensive to the taste is that the cold numbs the taste. As a consequence, ice is not spit out like a mouthful of distilled water taken by mistake in the laboratory. The belief that the cold temperature is the cause of the injurious effects of swallowing ice is a fallacy. It is, on the contrary, the cold which prevents the detection of the injuriousness of ice, or chemically pure water, like that obtained from rivulets of the high mountains, by paralyzing the sense of taste. The idea, too, that the symptoms of gastric irritation which sometimes follow the administration of ice-pills are due to bacteria, attached to the ice from contamination by external sources, is an erroneous one. As above pointed out the gastric irritation is due to the absence of impurities (salts) in the water. There is a well in Gastein which has been called for several centuries the "poison well." The citizens of Gastein do not drink its water, because they consider it poisonous; yet it contains not a trace of any known poison, its poisonous qualities evidently consisting in the fact that it is "too pure."—*Medical Review Editorial.*

TREATMENT OF EPILEPTIC INSANITY.—Peterson mentioned among new drugs and remedial methods worthy of attention, the simulo, a South American plant of the hyssop family, the tincture being given in doses of from one to two or three drams three times daily. His experience with this drug during several years leads him to believe that it deserves trial in most cases, as it is perfectly harmless, which can not be said of the bromids, borax, belladonna, and some other drugs. While he has found it extremely beneficial in some cases, in others it has had no effect at all.—*Phil. Med. Jour.*, Dec. 24, 1898.

PARTIAL OR TOTAL RESECTION OF THE CERVICAL SYMPATHETIC IN THE TREATMENT OF EXOPTHALMIC GOITRE. (Dr. Gerard Marchant La Semaine Medicale Nov. 2, 1898.)

"In *La Semaine Medicale* 1897, page 248, is published one case, since then I have had six hitherto unpublished, and I have collected thirty cases by other operators in France and Roumania.

In order to expose the cervical sympathetic, it is important to have landmarks which are above all: the internal jugular, the common carotid, and the pneumogastric. Three methods have been proposed to reach the sympathetic, having relation with the sternocleido mastoid muscle. In one case I entered by the anterior method as described by Jonnesco, but I cannot recommend it; the intramuscular method gives too small an opening and therefore it is the posterior method which seems to me to be the best, and this is the one which others have used most frequently; by this way we uncover the jugular and then it is easy to cut the superficial cervical aponeurosis up to the mastoid apophysis; one can now see the common carotid; lastly it is necessary to isolate the pneumogastric which it is necessary to find before looking for the sympathetic. In the search for the last, one must commence at the superior cervical ganglion which is usually easily found; however it has happened to me once that I could not find this ganglion, and was forced to give up the resection. In the case which I have detailed before Dr. Faure resected 7 to 8 centimeters. He recognizes now that it is sufficient to remove the superior cervical ganglion. According to the comparative results furnished by total and by partial resection, I believe it sufficient to practice partial resection, because the result seems to be superior to those of total resection.

The therapeutic results in the thirty cases published, show twenty that have been affected favorably. In my seven cases, I have had two complete cures, two improvements, two non-successes, and one death. Adding my observation to the thirty published cases, there have been five immediate deaths, and three remote deaths, one from nephri-

tis, a year and a half later, the two others, five to six weeks after the operation. In four cases of immediate death two were due to grippe-pneumonia, two to pulmonary congestion, one to erysipelas. The fifth case was a chronic drunkard who died on the third day following febrile symptoms accompanied by extreme agitation. I do not believe under the circumstances therefore that this operation can be considered a dangerous one. If we consider that exophthalmic goitre is a very serious affection leading to death if left to itself, and accompanied by serious complications (ocular accidents for example), it seems to me that surgical intervention is sufficiently indicated in cases where medical treatment is of no avail. Three operations have been used in the treatment of exophthalmic goitre. Exthyropexy has been abandoned by its originator; thyroidectomy has given few cures, and on the contrary many deaths; the partial resection of the cervical sympathetic therefore appears to me to be a means of treatment we may truly call precious."

—*Sneve, excerpt in St. Paul Medical Journal, February.*

NOITOL IN ECZEMA.—Noitol is commended by Dr. W. H. Morse, of Lima, Ohio, in the treatment of this disease which is so often neurotic, as an antiseptic vaso-motor constrictor, cleansing and diminishing the caliber of the cutaneous vessels.

He considers it "distinctly remedial when there is a neurotic condition of the skin" and Dr. Stanley M. Ward has as much faith in it as he has in quinine for chills.

NEURO-ANATOMY.

CONTRIBUTION TO THE QUESTION OF THE ORIGIN OF THE FACIAL NERVE. (Alexander Bruce, M. A., M. D. F. R. C. P. Ed., F. R. S. Ed., Scottish Medical and Surgical Journal, November, 1898.)

Dr. Bruce calls attention to the clinical fact that the "upper face" muscles, namely, the orbicularis palpebrarum, the frontalis and the corrugator supercilius usually escape paralysis in lesions of the facial nucleus, or of the path connecting this with its cortical centre, while in peripheral

or "intranuclear" paralysis of the nerve all the facial muscles are alike paralyzed. In hemiplegia these muscles may be transiently paralyzed, but this condition almost always passes off. He refers to Broadbent's hypothesis, namely, that movements which are habitually associated bilaterally are equally innervated from both sides of the cerebrum. This association is now explained by the anatomical discoveries of Muratoff, Pitres, etc., showing that each hemisphere of the brain sends motor fibres to both sides of the central nervous axis. He emphasizes the fact that the supply to the opposite side is greater than that to the same side, and that a lesion of one motor tract causes a paralysis limited to the opposite side and at most a slight weakness of the same side. Therefore, when bilateral movements remain after unilateral brain lesion the crossed and the direct nerve supply must be about equal, so that when one hemisphere is unable to act there is no manifest difference in loss of motor power between the two sides because the other hemisphere still supplies them equally. This he believes to be probably the case with reference to the nuclei of the "upper face" muscles.

In chronic bulbar paralysis and amyotrophic lateral sclerosis, both diseases involving the facial nucleus, the "upper face" muscles usually escape or are not innervated from this nucleus, or that if they are, the nucleus is only partially involved. The latter hypothesis, however, is destitute of anatomical support. In regard to the first supposition the view formerly held by Lockehart Clark, that the lip muscles are supplied by the "inferior hypoglossal nucleus" no longer obtains. Dr. Bruce does not agree with Gowers that the physiological relationship between the movements of the tongue and of the lips show an identity of nuclei of the nerves to their muscles. After quoting Gowers to the effect that the fibres for the orbicularis oris may be traced to the hypoglossal nucleus, Dr. Bruce cites twenty-one cases in which postmortems have been made supplying sufficient anatomical evidence to make the contrary probable. After examining a large number of sections of the medulla and the pons of the cat, rabbit, calf, human

foetus and of the adult, and also a number from a case of amyotrophic lateral sclerosis, he has arrived at the conclusion that there is no communication either in the upward or downward direction, with either the posterior longitudinal fasciculus or the formatio reticularis, as Gowers supposed. But he does find at the upper end of the loop of the facial nerve a well marked bundle of fibres which is seen to cross the mesial plain and enter the posterior longitudinal fasciculus of the opposite side. This crossed root seems to him to be concerned in the innervation of the "upper face" muscles. It does not as he at one time believed and as Obersteiner, Marinesco and others still hold, arise from the opposite facial nucleus, but from a nucleus at a higher level than the main facial nucleus. The existence of this crossed root is very clearly shown by the plates from Dr. Bruce's sections which illustrate the article.—*Riggs, excerpt in St. Paul Medical Journal*, February.

THE HUMAN BRAIN.—A German biologist has calculated that the human brain contains 300,000,000 nerve cells, 5,000,000 of which die and are succeeded by new ones every day. At this rate, assuming the correctness of the German's guess, we get an entirely new brain every sixty days.—*Boston Medical and Surgical Journal*, Sept. 22, 1898.

NEURO-PHYSIOLOGY.

THE EFFECT OF BREATHING UPON THE VOLUME AND FORM OF THE BLOOD CELLS.—The author made some investigations and measurements which showed the effect of breathing upon the volume and form of the blood corpuscles, and comes to the following conclusions: That in the body a regular increase and decrease of the size of the red and white blood corpuscles takes place. The distension takes place in the capillaries under the influence of the carbondioxide, while the contraction of the blood corpuscles takes place in the lungs where the carbondioxide is removed. In the case of the red blood corpuscles, there is not only under the influence of the carbondioxide, a distension but also a change in their form and the blood cor-

puscles approach more nearly the form of a ball. Consequently under the microscope the wide appears less and the corpuscles appear smaller. Ueber den Einfluss der Athmung auf das Volum und die Form der Blutkörperchen. H. J. Hamburger, Ztschr. f. Thiermed., Vol. 2, pt. 6.—*National Medical Review.*

PSYCHO-THERAPY.

The Medical Age has come across the following and asks linguists for a translation of some of the words:

AN OBSTETRICAL CHARM.—From an ancient 4to MS. formerly in the collection of Herbert, dated 1475, is transcribed the following charm, to be bound to the thigh of a lying-in woman:

For woman that travelyth of chylde, bynd thys wryt to her thye: In nomine Patris † et Filii † et Spiritus Sancti † Amen. † Per virtutem Domini sint medicina mei pia crux et passio Christi. † Vulnera quinque Domini sint medicina mei. † Sancta Maria peperit Christum. † Sancta Anna peperit Mariam. † Sancta Elizabet peperit Johannem. † Sancta Cecilia peperit Remigium. † Arepo tenet opera rotas. † Christus vincit. † Christus regnat. † Christus dixit Lazare veni foras. † Christus imperat. † Christus te vocat. † Mundus te gaudet. † Lex te desiderat. † Deus ultionum Dominus. † Deus preliorum Dominus libera famulam tuam N. † Dextra Domini fecit virtutem. † a. g. l. a. † Alp'ia † et Omega † Anna peperit Mariam, † Elizabet precursorem, † Maria Dominum nostrum Jesum Christum, sine dolore et tristitia. O infans sive vivus sive mortuus exi foras † Christus te vocat ad lucem. † Agyos. † Agyos. † Christus vincit. Christus imperat. † Christus regnat. † Sanctus † Sanctus † Sanctus † Dominus Deus. † Christus qui es, qui eras, † et qui venturus es. † Amen. bhurnon † blicitaono † Christus Nazarenus † Rex Judeorum fili Dei † miserere mei † Amen.

We shall be glad to have an explanation of “Arepo tenet opera rotas,” “a. g. l. a.,” “blicityaono.”

CLINICAL PSYCHIATRY.

AMENTIA AND DEMENTIA.—Amentia was used by the Vienna School to distinguish the suppression of the mental faculties, while dementia designates their destruction. The former includes cases of stuporous melancholia and all apathetic states in which the mind does not act. The patient takes little or no interest in his surroundings, often does not speak, or if he does, it is in such an aimless way and with so little attention that but little investigation of the mental state can be made. These cases are often careless in dress; their food, if taken voluntarily, may be consumed without order and apparently with little appreciation of taste. They sometimes soil themselves, and their time is passed in a listless and apathetic way.

The above picture, briefly outlined, will be recognized as a terminal state of many psychoses; it is perhaps more frequent after melancholia, less so after mania, not uncommon after confusional states, but it may be found in the history of almost any mental disorder.

Most of the cases presenting these symptoms are classed as dementes and an unfavorable prognosis given. In institutions for the insane these cases are too often relegated to back wards and so receive but little attention from the medical staff. Perhaps this is natural, as they are classed under dementia, and dementia is regarded as a hopeless and incurable condition. We would, however, make a plea for the retention of the word "amentia" in the classification of mental disorders. It includes a class of cases in which many of the signs of dementia are present, but in whom, in fact, there is no loss of mental powers, they being merely suppressed. The distinction between amentia and dementia is, that in the former the mental activities are simply in abeyance, while in the latter they are lost or destroyed.

Asylum records show cases in which insanity has existed for years, which have been classed as dementes, who made fairly good recoveries, who had been regarded as hopeless. This error we believe not to be uncommon, and

it arises from not bearing in mind clearly the distinction in the use of the two words, amentia and dementia.

We would like, if we were able, to point out clearly the distinction between the two conditions. Unfortunately, in many cases a differential diagnosis cannot be made, as the symptoms of one are identical with the other. In many cases, by close observation a fairly accurate distinction can be made. It is evidently the duty of those who have the care and treatment of the insane to make a close study of such cases. Those suffering from amentia are in a condition in which treatment is of great value in restoring unbalanced mental functions. To relegate them to the limbo of incurables is a very grave injustice.—*Dr. H. N. Moyer, Editorial Comment in Medicine.*

INSANITY FROM SUGGESTION OF FACT.—Under the caption “Insanity from Sensational News,” Dr. F. P. Stiles, in the Minn. Hom. Monthly, records the following: “I have known a man so impressed with the newspaper accounts of a murder trial, that he confessed that he was the murderer, and it was proven in court that he could not have had anything to do with it, and the real murderer is now serving his sentence. If vivid newspaper accounts can impel a man to confess a crime of which he is not guilty, it is not such a far cry to compel him to commit such a crime.

The following case came under my observation: A youth, who, being destitute, was taken into a family by indenture, lived there peacefully, doing light work on the farm, for some two or three years. Although not especially bright, he was considered a normal boy and treated as one of the family. The only child of the family was a little girl of four years, for whom the boy appeared to entertain the kindest affection. One day he was chopping wood in the yard and the little girl was playing near by, and without the least provocation, he deliberately walked over to her and split her head with the ax. He subsequently confessed the crime, saying he had read so much about murders in the newspapers that he could not resist the impulse to kill the child, though he bore her no ill will.

"Denver, Col., Nov., 29. John H. Dane, until recently a runner for the Western Hotel, was locked up in the city jail on a charge of insanity. He read the testimony in the Luetgert murder trial at Chicago, and became possessed of a frenzy to kill his wife and two children, and burn their bodies in the old garbage crematory. He is undoubtedly violently insane. For weeks probably 10,000 people in the United States wasted from one-to three or four hours reading the particulars of the Luetgert trial: none were benefited thereby, but many were mentally injured."

The suggestion of fact is an exceedingly potent factor with the neuropathic unstable in exciting maniacal impulsion of imperative and resistless nature in the neuropathically unstable. The lesson for the public press is obvious but it is not likely to be heeded by the daily papers for what were a thousand lives to one good scoop sensation?

THE FRENCH "JACK THE RIPPER."—Vacher, the French "Jack the Ripper," Lacassaigne (*Arch.. d'Anthropology Crim.*, November 15, 1898) relates the complete history of this criminal, who was recently executed in Paris, and who slew eleven people within the space of three years. His ancestry was good and his own youth somewhat uneventful. At his majority he proposed marriage to a young girl, and when rejected sought to kill both her and himself. His next few years were spent in asylums, from one of which he was finally discharged perfectly cured. He became a vagabond and passed as a harmless madman, wandering over a large section of the country. He cut the throats of his victims and then disembowled them, neither age nor sex being spared. Some of the crimes seemed motiveless, while others revealed evidences of sexual perversion, especially of the form known as sadism. A favorite procedure was to remove the breasts of his female victims. The author concludes that Vacher was responsible for his crimes; they could not be explained by impulse, epilepsy, etc., having been deliberate. After his capture he showed no signs of insanity and confessed everything.—*Review of Reviews.*

EDITORIAL.

[*All Unsigned Editorials are written by the Editor*].

A New German Psychiatric Weekly.—Beginning May 1, 1899 will be edited at Frieburg, Germany, a psychiatric weekly publication. C. Markold in Halle 9-s Publisher; Directors, Dr. Alt, Prof. Dr. Mendel, Prof. Dr. Guttstadt and others are joint publishers. A single number will comprise 16 pages and the tendency of the journal will be towards practical psychiatrie. The editors have asked and we ask our friends to send to the new journal, to help support the new journal and to contribute occasionally for it, little communications of actual interest in the department of insanity in America or contributions on practical psychiatrie. The managing editor is Dr. Med. Johannes Bresler, head physician of the Prov.-Heil and Phlege Institution, Frieburg in Schlesien, Germany. The eminent editorial management of the new enterprise is ample guarantee of its success.

Mental Agitation and Digestion.—Beaumont, in his observations on St. Martin, who was not always amiable, remarks Dr. Ayers in his Medical Mirror article on Dr. William Beaumont's famous Alixis St. Martin, noted the fact that anger and impatience retarded or checked entirely the digestive process. He says: 'I believe its effect (anger) is to change the properties of chyme, alter its homogeneous quality, and retard, or otherwise disturb, its due egress into its destined receptacle, the duodenum.'

Cannon, in his experiments confirmed this fact in a most striking manner. A cat under examination, when the peristaltic undulations were coursing regularly over the stomach, began to breathe heavily and struggle to get loose. As soon as the change took place the movements in the stomach entirely disappeared, the pyloric portion relaxed and presented a smooth rounded outline. The cat was quieted by gentle stroking, and as soon as this was accomplished the movements commenced in the stomach again."

Anaphrodisia from Fowler's Solution.—Simonescu relates another case of sexual impotency causing thoughts of suicide, in a vigorous young man, traced to the use of arsenic, which he had been taking in the form of Fowler's solution, for malaria. Suppression of the arsenic, and tonics, soon restored him to normal.—*Gaz. degli Osp.*, January 3.—*Jour. A. M. A.*

Thyroid Treatment in Arteriosclerosis, Etc.

—Lancereaux reports four cases; scleroderma, chronic rheumatism, gout and arteriosclerosis; arteriosclerosis causing cerebral hemorrhage with albuminuria, and a vasomotor affection of the extremities, all so improved by iodothyryin that an approaching and complete cure is anticipated.—*Bull. de l'Acad. de Méd.*, January 3, *Ibid.*

Responsibility of Alcoholized Persons.—In a discussion at the late meeting of the British Medical Association Dr. John F. Sutherland, Commissioner of Lunacy for Scotland, said: "A person intoxicated cannot and does not know the nature and quality of the act, or that it was a wrong act, because intoxication is insanity of the most perfect type, no matter how transient."

Rather too strongly put doctor? To constitute insanity the change of character from alcohol must appear as in other forms of mental alienation. If a man is intoxicated to the degree that he is insane, and that result depends much upon the man and his inherent but latent psychical instability, then of course he is entitled to the extenuation of mental disease. But some men can never become so drunk as not to know what they are doing and saying; nor too drunk to remember their words and acts. The man insane from drink remembers hazily, if at all, and does not realize the nature and quality of his acts as when sober. But all men drunk are not insane. Many men drunk appreciate their condition and act accordingly. Realizing the mental incubus of drink many men under its influence prudently retire for seclusion and sleep, thus acting most rationally under the embarrassing mental burden of alcohol.

Alopecia and Undying Faith.—*The Medical News* records that "a dermatologist began a paper on alopecia by saying: 'Faith is usually pictured as a maiden clinging convulsively to the rock of ages.' I think a more impressive representation would be that of a bald-headed patient rubbing vigorously into his scalp the remedy prescribed by the bald-headed specialist in skin diseases."

One of our talented editorial brethren, the crown of whose caput is denuded, is a reflecting mirror of this sort of faith. He has employed a sort of man-i-cure massage manipulator, to deftly delve with her deft digits among the struggling solitary capillary stubble on the summit of his cranium, until he really imagines "something will come of the rubbing." While he has little faith in head masseuses his faith is unbounded in *his* masseuse and the last we saw of him he was illustrating his supreme faith in the sex to take the hair off a man's face as well as raise it on his head by employing a lady barber.

The Insane of Germanic Continental Countries are, more than in America, taken care of by private funds. A young man whose wife may become insane and remain insane throughout a long lifetime, is compelled, if he can earn the money, to continue to support her, instead of, as in America, after possibly a brief season of private care to demonstrate the curability or otherwise of the case, if unfavorable to shift the burden of financial care upon the commonwealth. I noticed this condition largely present in Holland and in Berlin and in other German cities, private asylums are numerous and well maintained. In this city the two leading institutions are at Pankow, an institution fifty years old, and Dr. Carl Edel's place, twenty-eight years old, at Charlottensburg. These institutions having been built so long ago are conducted upon the older methods of restraint and confinement, but I was pleased with the methods at both places. Dr. Edel is growing old and suffers from rheumatic gout, but his well known and successful career in the care of the insane, makes his service of great demand wherever German is spoken in Europe. He has one hundred and fifty patients in the poorer quarters, which are placed with him by the Provinces, and for which he gets a price that would not pay the salaries of the nurses in America. In the private portion of both these institutions, are many patients from Russia, and in fact for all kinds of diseases, Germany and German doctors are in much favor with the Slavonics of the north and east.

Private Sanitariums in Berlin are numerous and the specialist on nervous diseases is much in evidence everywhere. The polyclinic for nervous diseases of Dr. E. Mendel on Dorotheerstrasse, and of Dr. Jolly, at the Charitie, being the greatest clinics in that department here. The profession of Europe is more willing to wait for results of a financial nature than it would be in America, I be-

lieve. In Holland, the other day, I visited an institution for nervous diseases which had been opened many months, and yet not a single case had been received. As the two medical superintendents were at the same time in charge of a public institution for the insane and associated with other clinical work, I was sure that if the same conditions had prevailed in America, the new establishment would have made a better "showing," although at greater cost to the proprietors. Again, I visited a private asylum where the medical officer told me, with some evident pleasure, that the institution, owned by a joint stock company, had just begun to pay expenses. It was then in its fifteenth year.—*Dr. Henry Waldo Coe, (The Wanderer), in Medical Sentinel.*

Suggestions of Epilepsy.—The confession of John Moore, of Hutchinson, Kansas, described as the "Hutchinson fiend," from the cold-blooded, heartless manner in which he took the life of his five children at one furious onslaught with knife and hatchet while they were asleep in bed, points either to epileptic murderous automatism or to an attempt at feigning this disease. Similar cases of undoubtedly epilepsy are on record and this case ought to be most thoroughly studied by the profession of Kansas.

"I am 35 years old; was born in Illinois. Was deserted when small and have no relatives. Left Emporia a month ago; came to Hutchinson contrary to my wishes, and had no work. My wife's folks are a hard set. The world looked black and I was discouraged. Have had spells seven or eight years. I often have ringing in my head. When I have them, I do not know anything. I cannot tell when they are coming. I had been feeling badly for three days. Was badly discouraged."

Moore claims he has no recollection of killing his children, but says that he has a dream-like feeling that he "did something to them." Following is the important part of his statement:

"This has been an awful hard winter on me. I wanted my father-in-law to take the children and let me and my wife work out and he would not do it. Three of his children were over there eating off me, and I told him I wanted to pay the \$10.50, and if I did I would not have anything to live on. I always paid my debts. I thought we could move into the same house and he could look after the children, and then we work out; and that would kind of help along a little, and the children would be looked after. But he would not agree to any of these things.

"This was about 4 o'clock in the afternoon. My wife

went to stay over night with a Mrs. Walker, with whom she had been working for two or three days. After this I went up to my brother-in-law's, Lee Ensley, and I stayed there until about 9 o'clock and the children stayed at home. I got supper for the children and we all ate together. I felt very blue and discouraged, and the children were all in bed when I came back, and were asleep. They were all five on the floor in one bed. When I came in I turned the lamp down and went to bed. I then had one of the worst spells, and my head hurt me awfully, and everything seemed floating before me, and the next thing I remember after this was trying to get out of the house myself. The whole thing seemed to be an awful nightmare to me. I didn't talk any to my children. I do not recollect anything about the hatchet or the knife. If I did that I don't have any recollection of it. I told my wife that I was going to leave, and it looked as if I had to leave, and she told me to leave, and I could not bear to leave my children, and leave them with that family. I could not bear to think of leaving them to live like the Franklin children. My 12-year-old boy could read and write, and could figure pretty well. I told my wife that all I wanted to live for was to see what my children would do, and these things kind of drove me to despair. When I came in, and these things looked so black to me, I seemed to lose my reason. I have no recollection after this of killing the children.

"The next thing I recollect is of going over to the house of a neighbor's and the house was burning and the children were in there. It seems as though I had a fearful dream, in which the children were there, and I hardly know how it was. I have a recollection of going through a struggle like a dream that I half remember. All the recollection that I have about this is that I would rather see my children dead than leave them in the hands of those people. I mean by that my wife's people. It seems like a dream to me now, and that I did something to the children, but I do not remember using the knife and hatchet. I loved my children and I lived for them and would have had them educated if it took every cent that I had, and everything that I could have made. That is one thing I lacked. My wife was the best one of the Franklin family, and I loved her. She was a good, virtuous and true woman, and no man can say a word against her."

Moore's confession was made before Notary Public Alex. S. Hendrick.

Moore's children were Carl, aged 12 years; Mary, aged

9; Pearl, aged 8; Charles, aged 5, and Lee, aged 3. They were all in one bed in an adjoining room to that which Moore slept in. The fire started in the children's room, and before the fire department could reach the place, which was nearly a mile from the station, the house was in flames.

Moore told no one that his children were in the building and made no attempt to rescue them. When the doctors who examined the bodies testified at the Coroner's inquest, their evidence showed the horrible nature of the crime. All of the children had their skulls crushed, and four of them had their throats cut evidently with a butcher knife. The baby, Lee, had his spinal column severed by the blow of the butcher knife and his head was crushed with two blows, one on each side. The children were all found huddled up together, the burning debris on them. They were burned in a horrible manner.

At the Coroner's inquest Moore told of the burning building. He said that he was awakened by the fire, but that it had progressed so far and there was so much smoke and fire that he could not get to the children. He was not questioned as to the killing, but as the doctors told of the cuts on the children and of the horrible appearance of their burned bodies, Moore never showed the slightest interest. He is described as a black-haired, black-whiskered, hard, brutish-looking man, ignorant and without any feeling, appearing absolutely indifferent as the witnesses detailed the conditions of the bodies.

Mrs. Moore, the mother, was not at home. She spent the night at a neighbor's, nursing a sick woman. When told of the horrible occurrence she was almost wild with grief. She says she can give no reason for her husband's horrible crime; that he has always been kind and indulgent, and that she has had no trouble with him.

Moore never showed the slightest interest when the jury returned, binding him over to the District Court, charged with the murder of his children.

When Moore was first arrested and taken to McPherson, Kansas, by the authorities, to save him from being lynched, he is said to have confessed that he killed his children after a quarrel with his wife, who threatened to leave him and take them to the home of her parents, whom Moore greatly disliked.

We should feel much indebted to the medical men if they would look deeply into this case. *Prima facie* a sane man would not be likely to kill his children for the cause alleged in the confession he made at McPherson. Epi-

leptics tell contradictory and confused stories and do not clearly understand their own conduct and yet sometimes think it ought to be explained without being able to explain it in any satisfactory manner either to themselves or others.

The question of epilepsy and epileptic alternative psychical states is a legitimate subject of inquiry in such violent and brutal crimes against nature. Moore may be an epileptic and a victim of its equivalent alternating psychic disturbances. Look into the case, doctors of Kansas, and let the *Alienist and Neurologist* hear from you.

While we write, a bloody record of dream automatism comes over the wires from Tacoma, Washington, of the killing of a wife by her husband, Dr. Charles Correy, while both were in the same bed asleep.

Correy was ill and his story of the affair is that he was laboring under a nightmare, believing his wife was being pursued by a stranger, who was intent on killing her. In his dream, Correy says, he followed the two from Tacoma to Washington, and just as he fancied the man was about to stab her, fired twice with his revolver. He awoke with a start to find himself sitting in bed with a smoking revolver in his hand. Correy had drawn his revolver from its place under the pillow and killed his wife. The relations between Correy and his wife have been very affectionate and the authorities believe his story. The husband is reported as nearly crazed with grief while friends are watching him to prevent his suicide.

Dream automatism is allied to somnambulism, of the same nature differing from it in degree of motor activity only, and Correy's explanation of the murder of his wife may be true in fact. The subject furnishes another theme of medico-legal inquiry.

Another quintuple murderer, John Gilbert by name, has confessed to the killing of his wife and four children in the same state and was sentenced to be hanged March 24th.

It is said that there are over 50 men in the Penitentiary of Kansas, under sentence of death whose death warrants have not been signed by the Governor, and that he is averse to signing death warrants.

This fact of immunity from the gallows in that state must be taken into account in estimating the question of insanity in Kansas. The penalty of crime and the certainty of the guilty receiving the full penalty, must be considered in juxtaposition to the probability of disease exemption.

Dr. J. C. Corbus, of Kankakee, Illinois, has been elected superintendent of the Kankakee Hospital for the Insane of Illinois.

Dr. J. T. Wilson, of Sherman, Texas, has accepted the superintendency of the State Insane Asylum, Terrell, Texas.

Idleness Causes Insanity in Convicts.—Six convicts, driven mad by idleness, were recently taken from the Kings County, N. Y., Penitentiary to the state asylum for the criminal insane. One of the penitentiary officials said that until the abolition of convict labor there had not been a case of insanity in that institution for years.

American Medico-Psychological Association.—The fifty-ninth annual meeting of the American Medico-Psychological Association will be held in New York, May 23-24-25 and 26, 1899. The headquarters will be at the Waldorf-Astoria, where a reduction of one dollar in the price of rooms will be made to members.

The Sterilization of Women.—The subject of the indications that justify the sterilization of women with a description of a new procedure for the effecting of that end, forms the subject of an article by Professor P. G. Spinelli, in the *Archivio Italiano de Ginecologia* for October 31, 1898, and of an apt and timely editorial by Dr. Frank P. Foster in the *New York Medical Journal* for January 28th last. Dr. Foster truly says: The question is one of great importance, not only as regards the individual, but also from the standpoint of racial economy.

The process Dr. Spinelli recommended is a surgical measure and consists in interrupting the utero-ovarian way so as to prevent the spermatozoids from reaching the ovule, by ligating the tube, unless disease renders their removal a necessity.

While Dr. Foster would not counsel any increase of superabundant surgical enthusiasm, and while distinctly depreciating any unnecessary "unsexing" of women, he thinks that there are numberless instances in which a safe and easy method of rendering women sterile when pregnancy would be a source of more than ordinary danger to the individual, or a direct wrong to the community, is far better than a harsh prohibition of that union without which, when rightly entered upon, the highest aim and incentive of life is incomplete, and in many cases life itself becomes a burden and a despair.

This procedure of sterilization of women might be styled a new process of prophylaxis against idiocy, imbecility, epilepsy, insanity, inebriety, etc.; a prophylaxis against congenital neuropathy, etc., cutting off at the fountain source one half of the animal crop of degenerates. But how shall we cut off the other half? Prof. Murphy, of Chicago, our eminent surgical friend, would say excise the epididymas; this conserves the genital cosmetics and at the same time the congenital health of the race. It is as good as castration and better looking in its results.

Boy of Nine Loses His Mind From Being Repeatedly Hypnotized by an Older Boy.—Houghton, Mich., Sept. 30.—John Kuranen, of Hancock, Mich., aged nine years, was placed in the County Jail to-day hopelessly insane.

A neighbor's boy, of twice young Kuranen's age, repeatedly hypnotized the lad, who lost his mind in consequence and is now subject to violent dementia.—*Newspaper Account.*

Time for Protective Action.—The enormous disparity in the prices of phenacetin, sulphonal and trional in the United States as compared with the prices in other countries suggests prompt remedial action both by the medical profession and by the government. We can strike back at this wrong. Let us do it, promptly and effectively. Our duty of twenty-five per cent. does not justify a five hundred and fifty per cent. discrimination against us. We have the coal and the coal tar in abundance and we have the talent to make coal tar derivations.

Let us make our own sulphonal, trional, phenacetin, etc., or their equivalents, and prescribe them or other substitutes until justice comes our way again.

Look at this picture of wrong and resolve to right it:

	Per ounce In Canada.	Per ounce In U. S.
Phenacetin	18c	\$.95
Sulphonal	38c	1.25
Trional	78c	1.40

Gray's Glycerine Tonic.—Those who ever knew Dr. John P. Gray, the able superintendent of the New York State Lunatic Asylum, at Utica, will recall the zeal with which he commended the use of phosphoric acid, glycerine and vegetable tonics in combination for the neurastenia of his delibilitated patients.

This combination for nerve and brain exhaustion was one of his favorite prescriptions in the practice of that great

institution, and it is being prepared now for the profession by the Purdue Frederick Co., who furnish it in a more economical and convenient form for ready administration than if otherwise prescribed.

Glycerinated Vaccine Lymph.—Parke, Davis & Company send us some excellent literature on this subject, which carries conviction to our mind that glycerinated vaccine lymph is at least less likely to induce septic infection than vaccine points. This lymph ought to give better security of being aseptic, if not more active, than the points.

The Fake Parasite.—The profession and the dear public have their parasites as well as our patients. The fake masseur, the fake electrician, the fake proprietary and the fake doctor. The faith cure, the mind healer, the osteopathist and the christian scientist. The fake doctor contempts science, the fake proprietary fraudulently imitates genuine proprietary therapeutic preparations of real merit. Most of these fakirs counterfeit science and "shove the queer" on gullible people, but the christian scientist ignores all science and even the resources which Christ himself did not neglect to use. Three of these fakirs are treated of by Dr. I. N. Love, in his inimitable style in his inimitable journal, the *Medical Mirror*, and we need add nothing to what he has so touchingly said of them in the December number of the *Medical Mirror*. These and the osteopathic fakir, that "particular 'She-Fakir,' who inveigled Harold Frederic to neglect the help of scientific physicians to his own physical undoing, has very properly been indicted by a London jury for manslaughter—a proper verdict would be 'fool-slaughter.'" The third editorial we quote in part: "I clip from a religious journal the following godly lesson. A young man, whose character is above reproach, prominent in the religious circles of a Pennsylvania village, an exhorter of the M. E. Society there, secretary of the Quarterly Conference, and at one time president of the Christian Endeavor Society, has long been a user of Blank's Tabules, and says of them: 'They keep my bowels open, they do not gripe, they do not purge, and I do not have pains in my stomach any more, which I had with constipation and dyspepsia for years—in fact, up to about three days after I had been taking the tabules. There used to be some kinds of food my stomach would sicken on, pork, for instance. I could not eat it without a distressed feeling. Now everything goes down, pork and greasy food, that used to make me sick to think of. I al-

ways have a few of the tabules in my pocket for use if occasion requires.'"

"The proprietor of Blank's Tabules did well to announce in the beginning that the character of the constipated young Christian Endeavorer was above reproach. Indeed, anyone who takes these tabules needs to have his character vouched for since we know the unworthy methods that have been pursued in launching them upon a gullible public, not to speak of the effort made by an advertising agency' to shove them down the throat of the medical profession, though the latter had never given evidence of needing purgation.

"This good young man with constipated ideas who exhorted much to dying sinners and defecated but little, no doubt since he can 'eat pork and other greasy things'.with impunity, has not only now a free flow of bile, ideas and fecal matter, but a diarrhoea of words that absolutely paralyzes the ungodly and his song will ever be, 'Praise Blank from whom all bile doth flow.'"

The Fervor and the Folly of the Kiss.—A NEUROLOGIST'S NOTION.—The recent public osculatory performance, in which a young American hero was the victim without the alternative of Hobson's choice, inspires us to remark on the fervor and folly, the privilege and the fatality of the kiss.

There seems prevalent among a certain proportion of the weaker sex a very foolish notion that the bestowal of a kiss, by a comely woman, upon a man, is a boon which any man ought to prize and enjoy, yet kisses are proverbially matters of choice, as wives are, to man. There are some men who would wish to be consulted before being assaulted by an importunate patriotic kisser, as there are at least some women who consider that in this operation is a mutual performance in each, or both, and should be done by willing mouths, if not voluntary souls. If the sanctity of the kiss is not to be replaced by the folly of it, such silly performances as the public kissing of a brave naval officer, by women unknown to him, without previous arrangement, is not exactly the proper thing, even in patriotic love, though any surprise of the enemy may be justified in war. The value of a kiss is in its mutual appreciation, the fervor it excites and all it inspires in the two recipients, the giver and the taker. It should fall like mercy on the place beneath, "blessing her that gives and him that receives."

The taker of a kiss may be as coldly impressed by it

as an undertaker at a funeral. The business compels him to be there, that is all. That subtle essence in the kiss that gives it pleasurable ecstasy or value, aversion, disgust or indifference to either recipient, is altogether in its neuro-psychological relations to both parties.

The soul-inspiring kiss goes straight to the psychical centers where the soul resides. Then it passes on to the psychical erotic centers and the man and the woman are aflame with the fervor of love. Then in very truth "two souls may have but a single thought" and "two hearts may beat as one." To the neurologist and the psychologist what folly, then, in the public promiscuous kissing of Lieut. Hobson, or his mate, by unknown women? There is nothing in it but notoriety for either the young men or young women, and the profanation of the psychical sanctity of mutually willed, erotic, true osculation, which has an inalienable natural right to the strictest selection, which no ruthless invader should disturb.

Inebriety in the Army.—The Journal of Inebriety says: "From six to ten per cent. of all the soldiers in the United States army are treated yearly for inebriety. This, in times of peace and in forts and garrisons. Of this number, three and a half per cent. die from the effects of spirits. These are said to be minimum statistics and far below the actual number treated and dying. These facts reflect on the intelligence of the authorities, and call for a change." If this is really a temperate statement of the exact truth, we quite fully share in the conclusion of the journal aforesaid, and think it high time the canteen were abolished and the beer ration suspended.

Dr. George H. Rohe.—The death of Dr. Rohé was a great shock to the profession. With few exceptions no one had an idea that his heart was affected. Dr. Rohé was a man justly admired by all whom his extended reputation reached. He was of most versatile ability. He was a skilled dermatologist, an expert gynecologist, an authority on hygiene and sanitary science, and of late years had become an alienist of such note that his work just begun at the Springfield Asylum will go on record.

Dr. Rohé was born in Maryland in 1851. He received his degree at the University of Maryland in 1873, and after some hospital experience began at once to practice in Baltimore. He had occupied various positions of trust and importance, and was a member of a large number of American and foreign medical and scientific societies. He was always a prominent figure at any medical gathering.

He was appointed health commissioner of Baltimore under Mayor Davidson, and later resigned that office to accept the position of superintendent of the Maryland Hospital for the Insane. Then when the State bought ground and appropriated money for the erection of a second insane asylum, Dr. Rohé was given entire charge of this institution, and his excellent work, which he had only just begun, is well described by Dr. A. L. Gihon in the *Philadelphia Medical Journal* of November 3, 1898, in an article entitled "A Modern Madhouse."

Dr. Rohé was the author of several works which had a large circulation, and was at one time editor of the *Medical Chronicle* and collaborator on various medical and scientific journals. At the time of his death he was professor of *materia medica*, therapeutics, hygiene and mental diseases in the College of Physicians and Surgeons.

In his domestic relations he was most happy, and was a fond father and loving husband. He was a member of the University and Athenæum Clubs of Baltimore, and was one of the leading spirits of the Flint Club. While Dr. Rohé will be missed in many quarters, especially will the insane at the Springfield Asylum feel the need of his scientific care, for it will be no easy matter to choose a fitting successor to him, and there is great fear that an unfit political appointment may mar his excellent work. It has been difficult in these few words to pay a just tribute to the deceased.

"An Obstetrical Charm."—Concerning this charm *The Medical Age* has the following instructive correspondence from B. T. Whitmore, M. D., LL. D.:

A slight error of topography recurs several times in the old charm as printed * * * For "medicina mie" read "medicina mea," and better sense and better Latin will result.

The so-called charm is of the class of healing agents of the Middle Ages, known as "Patters," from the occurrence of "Patris" in the opening benediction, a word generally written in the manuscripts as a rubic—that is to say in red ink—and on that account most prominent to the eye.

The phrase "Arepo tenet opera rotas" is not complete in this version, and so has none of the virtue which medical men of the time united in ascribing to it, a virtue which the laity accepted as proved. It should be "Sator arepo tenet opera rotas," and when thus written is filled with mystic power. It is a palindrome—that is, it reads

exactly the same whether read forward or backward. The virtue of the palindrome was never doubted in the Middle Ages. It is a branch of demonology. In every charm or patter it was always obligatory to leave a place for the devil. In the one quoted the devil could not enter on any of the lines of the benediction or of the following Litany of Travail. The sentence "Sator arepo tenet opera rotas" was put in expressly for the Father of Evil. If he entered at the front end of the sentence he was able to steer a straight course as far as the letter "n" in "tenet," which is in the exact center of the sentence; from that point onward he went over the same ground he had already traversed, going back letter by letter in the reverse order, and coming out eventually at the very point at which he entered. This was a practical joke on the devil; he became very angry at the wearer of the charm, but no matter how hard he tried he never could do anything but come out where he went in, and therefore unable to work any evil. This was one of the largest and most complete palindromes, but all had the same virtue against the devil. The same virtues existed in the blessed medal of the saints who had palindromic names. Saint Anna's medal was a good prophylaxis against the marsh fever, because Anna is the same spelt forward or backward. Even the first mother, Eve, was considered a saint; her medal was a safeguard against the Will-o'-the-Wisp. Long after the therapeutic value had been lost from these sentences, palindromes continued to be made as a sort of exercise of literary ingenuity. This, of the period of Henry VIII., although incomplete in modern spelling, was perfect in the orthography of the period: "Lewd did I live & evil I did dwel." It will be seen that the central point is the ampersand, which must be printed as a single character. Even so recently as our own century there was a famous palindrome on Napoleon: "Able was I ere I saw Elba."

The other mysteries concerning which elucidation is asked are not so easy to explain. It is probable that the real meaning can no longer be discovered. These are the phrases "a. g. l. a.," "bhurnon," and "blichtaono." The latter is a typographical error for "blistacono." All three are of frequent recurrence in the Rosicrucian mystic philosophy; they are used repeatedly in the writing of the last of those mystics, the English Rosicrucian Robert Flud, better known in the Low Latin guise of Robertus de Fluctibus. It is manifest from the way in which he uses them, that they are intentional blinds to conceal from the uninitiated certain secrets which were communicated only by word of

mouth in duly constituted lodges of the Rosy Cross. The three above cited, with a considerable vocabulary of others, fall into two classes; one, of the type of "a. g. l. a." seems to be the initials of words which form a recognizable sentence well known to the fellow mystics, probably in Latin; the other, of which there are two examples in this patter, consists of apparently arbitrary words, all of which are an effort to betray an acquaintance with the Arabic. Both classes of hiding knowledge were by no means confined to mystics; they were perfectly ethical in accepted science. Some of the astronomical discoveries of Copernicus and Tycho Brahe were announced in this blind form, and in at least one instance the cipher has resisted every effort to expound it to the present day.

Both of these elements and the meaningless magic word, are found combined in a famous amulet, the "Abra-cadabra," which is not only palindromic, but has added virtue because it is susceptible of inscription in the triangle, itself a form of the Trinity with all its protective power against the devil. Thus:

A B R A C A D A B R A
B R A C A D A B R
R A C A D A B
A C A D A
C A D
A

The true palindrome appears in this in the line "acada" and at the tip of the triangle. Its greatest virtue lay in the fact that it could be read in a multitude of ways.—B. T. WHITMORE, M. D., LL. D.

Seventh International Congress Against the Abuse of Alcoholic Liquors, was Held in Paris, 4th to 9th, April, 1899.—The preliminary program of this congress gives promise of the widest discussion of this topic ever made at any one gathering. Nearly every aspect or phase of alcoholic injury and loss was treated by persons familiar and able to discuss it.

The morning sessions were confined to scientific studies. The following are some of the topics announced under three heads:

First; A. "Medical Science and Hygiene." "The Doctor and Alcohol," Dr. Mapain, Liege. "Prejudice and Alcohol," Dr. Bienfait, Liege. "Scientific Knowledge and Alcohol," Dr. Smith, Bordensea. "Physiology and Alcohol," Pasteur Martale, Berne. "Child Life and Alcohol," Lady Henry Somerset. "Mortality and Alcohol," Dr. Baer, Ber-

lin. "Muscular Effect and Alcohol," Dr. Laborde and Dr. Lapicsque, Paris. "Exciting Action of Alcohol," Dr. Gilbaut, Toulouse. "Medical Value of Alcohol," Dr. Kantoroviez, Hanover. "Therapeutics of Alcohol," Dr. Drysdale, London. "Public Institutions and Alcohol," Dr. Amery. "Tuberculosis and Alcohol," Dr. Uhiron, Roumania. "Inebriate Asylums," Dr. Forel, Zurich; Dr. Colla, Pomerania; Dr. Crothers, America; and Pasteur Marthaler, Berne. "Non-Alcoholic Drinks," Dr. Jordy, Berne. "Fruit Diet and Alcohol," Dr. Kamp, Frankfort.

Second, B. "Political and Social Economy and Legislation." "Longevity and Alcohol," Dr. Drysdale and Mr. White, U. K. A., England. "Assurance and Alcohol," Dr. Jordy, Berne, and Mr. Bingham, London. "Prohibition of Alcohol," Dr. Dawson Burns and Mr. Fielden Thorp. "Women's Duty," Miss Grey. "Inebriate Legislation," Dr. Norman Kerr. "High License," M. Caudelier. "Number of Drink Shops," M. Caudelier. "Local Option," Dr. LeGrain. "Netherlands Legislation," M. Van don Muelen. "Effect of Alcohol on Commerce," Dr. Brunon. "Number of Victims of Alcohol," Dr. Pasteur Marthaler, Berne.

Third, C. "Teaching, Education and Propagation." "Bands of Hope," Miss Hilda Dillon. "Abstinence and Moderation," Dr. Alice Drysdale and Dr. de Colleville. "The Bases of the British Movement," Mr. Robert Rae. "The Reform of Public Houses," Mr. W. Bode. "Recreations," Dr. Daum, Vienna. "Temperance Establishments," Dr. LeGrain. "Sailors' Home," M. Ruyssen, Rochelle. "Catering," Mr. Clark Wilson. "Counter Attractions Against Alcohol," Rev. James Sylvester. "Origin and Work of the National Temperance League," Mr. J. T. Rae. "Good Templars," Mr. Councillor Malins. "W. W. C. T. A.," Miss Agnes Slack. "Railway Union," Mr. A. C. Thomson.

The afternoon meetings were open for educational, moral and sociological studies of the drink problem. The first day the various questions of the relation of alcohol taking to the higher university training were presented. The following are some of the speakers: M. Brisson, Professor at the Sorbonne; Dr. Brunon, Director of the School of Medicine, Rouen; M. Ruyssen, Professor at the Lycee, Rochelle; M. Gilbaut, Professor at the Lycee, Toulouse.

The second afternoon the temperance cause in the primary schools was discussed by many of the leading educators of France, Germany, Switzerland, the Netherlands and other places.

The third afternoon session will take up alcoholism among workmen in city and country.

The fourth session will study alcoholism on native races and means of prevention.

The evenings will be open for the discussion of special topics by leaders and specialists. One will be devoted to the work of societies, the other to the influence of law and legislation, the other to women's work, the other to the crime phases of the question, and so on.

The president of this congress, Dr. LeGrain, is the medical director of one of the largest insane asylums of France, and an author of eminence on diseases of the brain and nervous system. Other officers include many prominent medical teachers, scientists and government officials and distinguished philanthropists. It is proposed to have representatives of every society and organization for temperance in the world, and if possible arouse a new interest in this topic, which is fast becoming the great theme of civilization. Twelve great countries of Europe have announced delegates to this meeting, and nearly a hundred leading men have been enrolled to take part. Five hundred delegates are expected, and it is expected that this meeting will be one of the most memorable ever held, devoted to this subject. Short papers are earnestly solicited on any one phase of the subject from American workers in the field. All letters should be addressed to the American Chairman of the Organization, T. D. Crothers, M. D., Hartford, Conn.

Psychological Section of the New York Medico-Legal Society.—The Psychological Section of the New York Medico-Legal Society met at the Waldorf-Astoria, on the evening of Wednesday, January 18, 1899, at 8 o'clock P. M.

A paper was read by Wm. Lee Howard, M. D., of Baltimore, Md., entitled, "*Double Personality*," and one by W. H. S. Monk, Esq., B. L., of the Dublin Bar, entitled, "*The Criminal Treatment of the Insane*." Short addresses by prominent members and invited guests were made after discussion.

The Tenth Congress of Alienists and Neurologists.—Convened at Marseilles on April 4th of this year, Dr. Doutrebende, chief physician and director of the Asile de Blois, presiding.

The International Medical Magazine.—Dr. Boardman Reed is the new editor of the *International Med-*

ical Magazine, of Philadelphia. Dr. W. L. Pyle, his predecessor, continues with the publication, as ophthalmological editor.

Gynecology and Neurology. A Paraphrase from Shylock in Merchant of Venice.—I am a woman. Hath not a woman eyes? Hath not a woman hands, organs, dimensions, senses, affections, passions; fed with the same food, hurt with the same weapons, subject to the same diseases, healed by the same means, warmed and cooled by the same summer and winter, as a man is? If you prick her, does she not bleed? If you tickle her, does she not laugh? If you poison her, does she not die? And if you wrong her, shall we not protest? And shall we not protect her?

Hath not a woman nerves? And do they not become diseased in center and periphery like as in man? If man be like woman in all save her special sex organs and much like him even in them, should she not oft resemble man in her diseases and oft require the same remedies?

(Vide *Merchant of Venice*, Act III, Scene I.)

Herein lies all the secret of her just and proper treatment somewhat difficult even yet although [she is mostly similar and that wherein she differs is yet not so greatly dissimilar that we may forget she is like her physiological partner, man, also a human and markedly so in all her neural mechanism, from pelvis to brain, from brain to pelvis and from ganglion of Meckle to ganglion of Impar.

Her neural affections often transcend her pelvic troubles as they complicate them often and, seldom proceeding exclusively from the latter, yet they are often brought into active life, as melancholia in man may be developed where a latent psychopathy predisposes and as surgery, even on man or woman, may bring from latent into active life, a post operative psychosis.

We should do but that to her, which we would that she might do to us in treatment were conditions reversed yet similar—she the physician and we the patient.

The contention of Neurology is not that woman has no special pelvic diseases which need special remedy, for she has many and much, but that she also has a nervous system with its diseases and its proneness to take on disease from depressing influences, among these, hopeless gynecological verdicts of imprudent or incapable gynecologists and the never terminating tail tinkering of the psuedo-gynecologist whose chief conception of woman centers upon her vagina, making that a perpetual repository for tampons, swabs,

pessaries, *pinus canadensis* and old junk, keeping the mind of woman hopelessly centered on a sensitive spot in her anatomy, ignoring neural conditions that make most of such local troubles possible, as in the antecedent vaso motor atony of the vaginal fluxes or leucorrhœas and are aggravated by despair engendered of a tedious and taxing psuedo gynecology.

The pelvis is not the "fons et origo" of all of woman's troubles though its wrong treatment may be, plus a neuro-pathic predisposition.

Local applications and resources that soothe, remedy or relieve, are not to be questioned and needed operative procedures where disease is, that tend quickly to cure or remove sources of irritation are not to be condemned. But the pelvis is not all there is of woman, though there remain a few fossils of that old, now almost extinct race of gynecologists who still think so. With their passing, has gone the recklessness of indiscriminate cleterectomy, the slashed neck and normal oophorectomy, thanks to neurologic protest and true gyneciac progress. But even a wise neurologist might advise to-day under certain imperative circumstances as in profound nymphomania, as one remedial resource, but not the only one and even possibly a normal oophorectomy under the worst of circumstances, though this operation is hardly ever a probable necessity under neurological light.

So seldom may it be wisely advised in the present light of a neurologically illumined gynecology, that though its original devisor lives in fame, Battepy's operation has passed into deserved desuetude. We stand nearer on common ground than ever before, concerning pelvic diseases of women. They should be remedied. Neurology insists on that whether these diseases proceed from, lead to or simply complicate neuropathic conditions.

Neurology has contended, but the contention is not necessary now with enlightened gynecolgy, that woman has her nervous system and its diseases as man has, independently of her genitals, which need to be treated coincidently and often primarily and not always secondarily or incidentally to pelvic treatment. Neither the nervous system nor the pelvis can be ignored in the treatment of women and women's brain least of all, for psychic impression on woman either mars or makes health, as it does beauty of expression.

The little gynecologist, whose chief delight was in tinkering around the os tincæ and the prima via that leads to a pandora box of woes, has passed, like the little naso-

pharynx doctor who sees a spur in every nose to account for all our human woes.

He has given place to the bold broad and manly operative gynecologist who does not ignore the counsel of the neurologist and when he goes for something, generally gets it. Light dissipates error, and in the broader light, neurology and gynecology walk hand in hand together. And "Now is the winter of our discontent, made glorious summer" by this rising sun of science. "Now are our brows bound with victorious wreaths, our bruised arms hung up for monuments."

The war is ended, sweet peace hath come which hath her victories no less renowned than war, and "the lion and the lamb shall lie down together." I have no objection to living with the lion of gynecology, if he continues hereafter as now to practice so perfectly antiseptic precautions.

"*The Passing of the Trained Writer*" in medical literature, is the subject of a timely and judicious editorial by Dr. Frank P. Foster, in his able journal, the *New York Medical Journal*, of February 11th, though Dr. Foster does not so definitely express it in the caption. But the trained writer will come again, and will come quickly. The profession can not long dispense with him. The untrained medical writer in medicine has already done himself and his profession much harm, and from the latitude allowed him in the literature of this country, he has, by this time, discovered that the pen is mightier than the knife for good or evil in medical communication.

The New Pharmacopœia.—The following to the editor of the *New York Medical Record* is significant as coming from a medical gentleman who classes himself among the Homœopathists, but it is opportune and should receive the attention of the profession generally. It would seem scarcely possible that so clean a sweep of remedies of real value could be seriously contemplated. The revision committee was not elected as an elision committee:

SIR:—In the *Medical Record* of the 11th, you state that the "Committee on United States Pharmacopœia of the State of New York has formulated six propositions," etc. One of the propositions is to exclude from the list in the new edition of the Pharmacopœia the following drugs: "Absinthium, allium, amyllum, anthemis, apocynum, asclepias, bryonia, calamus, calendula, cascarilla, castanea, caulophyllum, chenopodium, chelidonium, chondrus, coccus, crocus, cusso, cypripedium, dulcamara, eunonymus, granatum, guaiaci lignum, hedeoma, humnlus, inula, irris, juglans,

kamala, lappa, macis, marrubium, matricaria, melissa, menispernum, oleum sesami, pepo, phytolacca fructus, phytolacca radix, picrotoxinum, pulsatilla, rhus toxicodendron, rumex, sambucus, santalum tubrum, santonica, stillingia, sumbul, tabacum, tanacetum, and xanthoxylum." If the committee in their wisdom would advise the profession to acquaint themselves with *materia medicas* I am quite certain that they would hesitate to make such a clean sweep of drugs, some of which are required in daily practice. Is the maxim of Horace, "Vestigia nulla refrorsum," out of fashion in modern medicine, or is the maxim, "Vestigia semper retrorsum," now to be adopted?

T. GRISWOLD COMSTOCK, M.D.

ST. LOUIS, MO.

Dr. George H. Simmons, of Lincoln, Nebraska, the former editor of the *Western Medical Review*, published at Lincoln, Nebraska, has been elected by the board of trustees editor of the *Journal of the American Medical Association*, to succeed the late Dr. J. B. Hamilton. He assumed control about March 1st, and is to devote his entire time to the interests of the *Journal*, the salary of the position having been advanced from \$4000 to \$5000. He is a graduate of Rush Medical College in 1892, and ten years before of Hahnemann Medical College, of Chicago. He has been a member of the American Medical Association since 1897.

The *Western Medical Review* was conducted with marked editorial ability, and the new editor's journalistic experience gives promise of the fulfillment of high expectations in his new field. Personally, we are favorably impressed with Dr. Simmons.

Dr. Benjamin Franklin's Tonic Air and Sunlight Bath.—In a letter to Dr. Dabour, quoted in the December *Century*, Dr. Franklin thus refers to his practice of personal sanitation, in this regard: "I rise almost every morning and sit in my chamber without any clothes whatever, half an hour or an hour, according to the season, either reading or writing. This practice is not in the least painful, but, on the contrary, agreeable; and if I return to bed afterward, before I dress myself, as sometimes happens, I make a supplement to my night's rest of one or two hours of the most pleasing sleep that can be imagined. I find no ill consequences whatever resulting from it, and that at least it does not injure my health, if it does not, in fact, contribute much to its preservation. I shall therefore call it for the future a *bracing* or *tonic* bath." This habit-

ual morning proceeding of the great American statesman, philosopher, scientist and patriot, demonstrates the vigor of his constitution, and did much to maintain that vigor, especially the refreshing second "pleasing sleeps" which sometimes happened to him.

The habit of retiring as early as may be practicable, and arising in the early morning for intellectual labor after a long and recuperating sleep, is a good one for brain workers, in this age of brain strain from over work and worry, to imitate. If the children of our brains, the fruits of intellectual labor, were all born in the early morning hours after refreshing sleep, invigorating ablutions and tonic sun and air baths, the offspring would certainly be more vigorous and the intellectual world be cursed with fewer mental deformities and fads.

"**Dr. John B. Murphy**, of Mercy Hospital, presented in succession three interesting cases of gall-bladder surgery. In every instance, promptly on securing entrance into the bladder, he established by the click of his probe the presence of the stones. I noted that with his scoop he removed only those which were loose and easily lifted out, leaving the bulk of the stones in the bladder, placing the capacious glass drainage tube in the bladder, determining to leave the stones for removal later after they had loosened, with a view not to wound the mucous surfaces by their removal prematurely, and thus opposing traumatism and septic infection. The cases were remarkable, and the coincidence of having three such characteristic cases follow each other on the same morning was commented upon by those present. Dr. Murphy is a deft and skillful operator; he has an impressive manner as a teacher; he has a delicate and gentle and at the same time masterful way about him in the handling of his instruments and his patient that is charming. In some operative work upon the testicle, Dr. Murphy made the point that tuberculosis of this organ was nearly always confined to the epididymis, and that he uniformly removed the latter and saved the body of the testicle, thus husbanding the sexual and physical good of his patient. In one case of persistent hydrocele he operated radically, dissecting out the tunica vaginalis, and with it one or two evident small tubercular deposits. It is surprising, by the way, to recall how many robust appearing, well-developed men present themselves with tuberculosis of the testicle, and the conservative point made by Dr. Murphy, regarding the tubercular deposit being mostly confined to the epididymis, and advising the ablation of this only,

and the saving of the testicle itself, is a good one, and may well be kept in mind."—*I. N. Love, in Medical Mirror.*

As we were present and witnessed the diagnostic skill and unusual dexterity of Dr. Murphy, on the occasion referred to by Dr. Love, we take pleasure in adding our approbation to Dr. Love's encomium.

The Victims of the Quill.—F. Marion Crawford, in the *Three Fates*, page 46, says: "Let physicians rail at the horrible consequences of drink, of excessive smoking, of opium, of chloral, and of morphine. The most terrible of all stimulants is ink, the hardest of taskmasters, the most fascinating of enchanters, the breeders of the sweetest dreams and of the most appalling nightmares, the most insidious of poisons, the surest of destroyers." He asks: "Who catalogues the names of those many whose brains give way before their bodies are worn out? Who counts the suicides brought about by failure, the cases of men starving because they would rather write bad English than to go to work of any other sort?" And expresses the conviction that "their deaths alone, without counting other accidents, are more numerous than those caused by alcohol among drinkers, by nicotine among smokers, and morphine and like drugs among those who use them."

Psychiatry has catalogued them, neuriatry has named them. They are among their victims recorded as melancholiacs, paretics, dementes, maniacs, neuralgic, neuritic, paralytic, epeleptic and other neuropathic wrecks. In those departments of our asylums for the insane over whose portals fate has recorded the dread words of the Inferno, "All hope abandon ye who enter here," they are catalogued. In the inebrate hospitals, too, are some, and in premature graves, encoffined by suicide are many, and on their graves might be written, he stimulated when he should have slept and now he sleeps his last sleep, he drank to kill care, sorrow, trouble and thus killed himself, and the grave buried the old legend, in a new and more fatal sense, "the pen is mightier than the sword."

The Christian Scientists, since the death of Harold Frederick, the scoffers at legitimate medicine, are being probed and punctured and pricked by an aroused and indignant people.

Our friend, Dr. C. A. L. Reed, is quoted in the *N. Y. Sun* against them. The *N. Y. Times*, Frederick's own paper, or rather the paper of which he was correspondent, is fore-

most in the late assault on Mrs. Mary Baker Eddy, the founder of the new medical fad that would turn faith into a business. Now faith can do much, even to the removal of mountains of obstruction to recovery, but not always. The faith that heals diseases without other aid can also feed the hungry and save the starving, but Mrs. Eddy and her followers do not apply Christian Science to the solving of the food problem. If she did, it would fail if relied on as a business and means of livelihood, as the practice of Christian Science is. Our homœopathic friends come nearer making a successful business of faith than even Christian Scientists, but they have lately so stretched their creed that regular doses are not despised when their cases grow desperate.

Mrs. Eddy in her wonderful appeal to human credulity in the cure of disease, ignores the fact that the Divine Master selected Luke the good physician for one of his followers, took some bread and fish as the basis of a famous miracle, anointed the eyes of the blind with clay and spittle and sent them and the lame to the pool of Siloam to be healed. Some he healed by pure psychical impression and some by other means superadded, thus sanctioning the legitimate practice of medicine as it is practiced to-day by medicine and faith combined. Christ made no such mercenary use of his powers to heal as Mrs. Eddy and her fellow professionals in the Christian Science business. He went about doing good, but He never denounced the means His Father in Heaven had placed in the hands of man for man's relief as these mentally hemiopic scientists do. Religious perverts, unable to see the normal boundary of psychic suggestion in disease, imagine it all to be divine healing, though at the beck of those who would make it a business and exact pay for it.

A Capillary Kleptomaniac.—Chicago has developed a sadist of this description, who, for the past four years has been indulging this morbid impulse for possession of locks of women's hair, until his collection is said to amount to three hundred clippings from as many feminine hirsuits. He is a married man, aged twenty-four, described as an athletic, good-looking, intelligent young man, a recently married member of a good and wealthy family and one of the brightest students of Columbia Institute.

When arrested he confessed with remorse and in his humiliation begged to be shot. His name is given as John W. Jorgensen, and following is his confession and the arresting officers' statement as given to the *Press Reporter*:

"Four years ago I was sick with fever. The illness was

severe, and when I recovered I discovered that I had a strange desire to cut off girls' braids. It seemed to me the strangest of sensations. I had never known it before. It was ridiculous. I knew it, and laughed at it heartily. I would get it out of my mind. I would busy my mind with other things and give it no room there. But I could not. In spite of every earnest effort, I could not free my mind of that ridiculous desire to cut hair. It seemed to grow, and in a little while I knew it was serious and laughed at it no more.

"Almost before I knew it I got a pair of scissors. I was sane as ever I was in my life when I got the scissors, which something had commanded me to do, and which had to be done. And yet I knew I was doing something foolish of which my people and friends must not hear. After I got the scissors I began cutting hair. It was fascinating sport. I would rush upon a girl or young woman, catch her hair tight at the scalp and snip it off. It amused me to see how it frightened them and hear them scream, for I was good-natured all the time and knew I would not hurt them for anything.

"I would put the braids in my pocket and throw them away before I reached home, so my people would not know. Then I would suffer the bitterest remorse. All the fun in it, all the sport of it and all the fascination of it became humiliation and bitterness as soon as the excitement of catching the girls was over, and I cursed and despised myself and determined I would surrender to the police. I made this determination every time I cut a braid, but I was too weak to do what I threatened. I started for the police station several times and always weakened and turned back. Twice I went as far as the door. At other times I thought I would go to a doctor and tell my story. But I could not do it. I was afraid he would tell the police and cause my arrest. So I let it grow, and the desire to cut hair grew worse. From one to two trips a month I began making as many a week, and the last few weeks I have been out almost every evening, though not always getting a chance to do anything. I read everything the papers said about me, and the things printed of me frightened me so I became more cautious and quit struggling with girls to get their hair. I became satisfied to slip up behind them and clip their hair without touching them, and I expect I have taken 50 braids in this way when the girl I was shearing did not know of her loss until I was well away. I know that upon this particular thing I am crazy. Upon everything else I am sane."

Private detective Evans, at the Fair, noticed that the young man came in and went out without having any apparent reason and looked always at the hair of the women. The young fellow drew from his coat a long, bright pair of shears and clipped the hair of a young girl. He did it with a lightning motion and was away almost before the detective was aware of it. On Madison st. Miss _____ and her mother stood watching the firemen at work in the ruins of the McClurg building. His demeanor was that of a sober, earnest man—a spectator interested in what the firemen were doing.

The detectives stood close behind, watching his every move. They saw him look admiringly at the girl's long tresses; saw his left hand lift them gently and the right whisk out the scissors. And then, just as the blades closed, they threw themselves upon the clipper's back and arms. He woke to his peril like a mad giant. In an instant he had whirled upon them and borne them back, and, fighting furiously, they fell over the curb and rolled into the street. The clipper used his scissors and brought blood from Elliot's hand, but he was handcuffed and imprisoned. The police of Chicago call him 'Jack the Clipper.'

Professor Stephens Convicted of setting fire to Pardee Hall, Lafayette College, at Easton, Pennsylvania, is the same whose case was discussed in the October number of this journal.

The presiding Judge Scott fixed his sentence Saturday, February 18th, at nine years. The jury considered the deed was done from motives of revenge and was not caused by mental disease as the defense maintained.

Hospital or Asylum or Both?—Some superintendents of American asylums for the insane are still pleading, and justly, for a change of name for these institutions. All good institutions of the kind should have prominent hospital features and the public should be impressed with the fact that insanity in its early stages is ordinarily a curable disease and that its victims should have secured to them good and prompt medical treatment, as well by medication as by proper change of environment. But the insane citizen when he falls mentally maimed in the battle of life and his friends or legal guardians neglect or decline to secure early treatment, should also have the right of asylum care, even though hopelessly insane, in the institutions which his own means perchance, in his sane estate, helped, through legal taxation, to build and maintain and whose means may

even while he is hopelessly insane, through the taxes he pays the state, be contributing to sustain.

The state asylum for the insane should be the hospital and the home for the citizen mentally fallen, whether rich or poor, acute or chronically insane at his personal election or that of his friends or guardians. The older and more helpless or hopeless the patient and his malady, the more imperative the duty of the state to these helpless wards. The wrecked paralytics and senile decrepids should be harbored even though they may not be saved to lives of sanity. Whether violent or dangerous or helplessly, hopelessly demented by infirmity or age, the state's duty is morally as plain to asylum them when it may not cure, as it is to cure when it can. For these the asylum, for those the hospital.

But many curable insane are doomed to hopeless dementia by willful, intentional or misdirected sympathetic failure on the part of friends or guardians to secure for the insane prompt hospital treatment.

The histories of all our asylums for the insane show a gradual accumulation of chronic insane. But the insane should not be cast out because they are chronic and hopeless and perhaps harmless. The asylum is their proper and rightful home, if they were citizens in their sane estate and helped to construct it; and because, also, the asylum for the insane is a more normal environment for them than the outer world and therefore more congenial to them and conducive to their happiness and the pursuit thereof. The burden of their care is the duty of the state. The burden and duty of providing asylums for them belongs to government "of the people, by the people, for the people." That burden can be lightened by legal enactment, enforcing prompt treatment and hospital care of the acute insane, the neglect of whose early treatment makes chronic insanity and multiplies the hopeless chronic insane. On this subject with approbation, the testimony of other experience in harmony with our own, that of Dr. P. O. Horper, superintendent of the Arkansas State Lunatic Asylum, to which institution the doctor very properly writes to have applied the name of hospital.

"Isolation is the first principle of importance in the treatment of the insane, in fact one of our potent therapeutical agencies. They should be separated from home surroundings, from contact with familiar friends and relatives who oftentimes they fancy are inimical to them personally—away from those with whom they have lived and closely associ-

ated, and where their mental trouble began. No time should be lost in sending such patients to the asylum for prompt and early treatment.

To insure hope of restoration to mental health, the very moment that mental disturbance is indicated, prompt treatment, watchful nursing, generous diet, and all the skillful attention that can be brought to bear on the case should be given. The sooner recent and acute cases can have proper care and treatment the larger will be the percentage of recoveries."

In these recommendations is contained the preventive remedy against the increase of chronic insanity and the multiplication of helpless, hopeless wards for perpetual asylum at the expense of the state.

CORRESPONDENCE.

The Case of Mrs. Maybrick.—Mr. Clark Bell, Secretary of the New York Medico-Legal Society, sends out the following:

NEW YORK, Jan. 11, 1899.

Dear Sir and Colleague:—

From a careful consideration of the evidence in the case of Mrs. Florence E. Maybrick, an American lady of good family, married to a Liverpool cotton broker, tried and convicted of murder in the first degree, on a charge of poisoning her husband, some ten years since, I have reached the conclusion that Mr. Maybrick did not die from arsenical poisoning.

The evidence was very carefully reported in the Liverpool papers and has been collated by British writers which are accessible.

Under the English system there was no appeal, although legal grounds existed, which would have resulted in any American state or Canadian province in a new trial, and reversal on errors of law, in the charge of the Judge, aside from the question of reasonable doubt, of guilt of the crime charged.

The English Home Secretary commuted the sentence of death to imprisonment for life, on the recommendation of the trial Judge, Sir James FitzJames Stephen, on the alleged ground that a reasonable doubt existed of her actual guilt of the crime charged and she has since been confined in English prisons for nearly ten years.

This was the last case tried by Sir James FitzJames Stephen, whose mind failing, retired from the bench and who has since died.

If the jury had entertained the same doubt, that the Home Secretary assigned as a reason for a modification of her sentence, it would have been their duty to have given her the benefit of that doubt and acquitted her.

I send you herewith some articles bearing on her case from the study of the same by myself and others.

Strong appeals were made for her pardon from many Senators and members of Congress of the United States and prominent officials, besides thousands of her countrymen and women.

At last Mr. McKinley, the President, asked for her release through our Minister, Mr. Hay, as an act of international comity on the part of the British Government.

The accused stoutly asserts her innocence and though in delicate health has thus far withstood the terrible ordeal of life in an English prison all these years.

The Lord Chief Justice of England, Lord Killoween, then Sir Charles Russell, was her counsel and defended her on the trial.

Since he came to that position, and as Lord Chief Justice, who, under the Law of England, after the death of the trial Judge, acts in his place in matters connected with the Home Office, has strongly urged upon the present Home Secretary, Sir Matthew White Ridley, her pardon. Before his elevation to the Bench, he united with the other counsel in her case, in a written statement regarding the legality of her conviction, of which I send you a copy.

If you have not already given the case that attention and study which its importance demands, will you please do so, and furnish me with your opinion as to the medical and expert testimony of the case, and as to whether there is any doubt in your mind upon the cause of Mr. Maybrick's death.

The evidence on the trial and the later evidence before the Home Secretary, show, beyond question, that he was a confirmed arsenic eater and had been for years before his death.

A large property has been taken from the accused by the brothers of the deceased and she is left absolutely penniless.

Her mother, the Baroness de Rogues, resides at Rouen, France, and has given her life and nearly all her means to the work of securing her release. I am of the opinion that carefully prepared advice from American chemists, medical and scientific men would be of service, for use with the English Home Secretary, in securing the pardon of this unfortunate American lady, now suffering in an English prison, and that the present moment is opportune for such an effort, when the public sentiment in Great Britain, as well as in our country, is ripe for kindly and friendly offices,

especially when an almost universal feeling of sympathy for her exists, and a very general belief in her innocence on the part of those who have examined very carefully into her case.

Asking of you the favor of an early reply, I remain,
Very faithfully yours,

PROF. C. H. HUGHES, CLARK BELL.
Alienist and Neurologist.

I take great pleasure in offering my testimony to the great value of Cactina Pillets, in case of weak or irregular action of the heart. I have used them for four years and have never been disappointed in them. They not only stimulate the heart, but improve that organ permanently. I find them very useful in all cases of typhoid fever and pneumonia.

C. B. MATTHEWS, M. D.

Kent, Ind.

I have used Peacock's Chonia and find it very effective. I shall continue to prescribe it in my practice.

New York, N. Y. A. P. DALRYMPLE, M. D.

THE USE OF ERGOT IN CEREBRAL HEMORRHAGE.—
By Dr. Alex. L. Hodgdon, Professor of Diseases of the Nervous System and of the Mind, Maryland Medical College; Neurologist to the Home for the Aged, Baltimore, Md.

It has seemed to me that sufficient value has not been attached to the use of ergot in cerebral hemorrhage and probably the majority of practitioners do not use it in this condition, but I believe that those who have used it and any who may try it in the future would be loath to do without this valuable remedy. In my practice and also at the Home for the Aged, where there are many of these cases, there have been very few deaths from this disorder when the case was seen in its incipiency and the treatment was principally by the following formula; either the quantity reduced or digitalis added to suit the special case if necessary. The quantity of the bromide and the ergot might be diminished in the extremely aged.

R

Extr. Ergot Fluid 3*iv.*
Sodii Bromid. 3*iv.*
Agnæ 3*iv.*

M. et Sig. Tablespoonful every four hours, if necessary, carefully watching the effects of the drugs.

REVIEWS, BOOK NOTICES, ETC.

DEGENERACY: ITS SIGNS, CAUSES AND RESULTS. By Eugene S. Talbot, M.D., D.D.S. London, Walter Scott, 25 Warwick Lane, Paternoster Row, 1898. The present volume discusses both the etiology, and the results as well as the causes of degeneracy. The book is the first extended one on this subject since those of Morel and Moreau. It is much more in accord with the modern doctrines of biology and psychiatry, than most of the periodical communications to this subject. In the opening chapter it is shown that the conception of degeneracy occurred very early in the history of the race and led to the exposure of deformed children. In regard to the present conception of degeneracy, and the methods proposed for their cure, Dr. Talbot points out that Burton (*Anatomy of Melancholy*) practically paraphrased the notions much advocated in the medical press:

" So many ways we are plagued and punished for our father's defaults; in so much that as Fernelius truly saith: It is the greatest part of our felicity to be well born, and it were happy for human kind, if only such parents as are sound of body and mind, should be suffered to marry. An husbandman will sow none but the best and choicest seed upon his land, he will not rear a bull or a horse, except he be right shapen in all parts, or permit him to cover a mare, except he be well assured of his breed; we make choice of the best rams for our sheep, rear the neatest kine, and keep the best dogs. Then how careful should we be in begetting of our children. In former times some countries have been so chary in this behalf, so stern that if a child were crooked or deformed in body or mind, they made him away; so did the Indians of old by the relation of Crutus, and many other well-governed commonwealths, according to the discipline of those times. Heretofore in Scotland, saith Hector Boethius, if any were visited with the falling sickness, madness, gout, leprosy or any such dangerous disease, which were likely to be propagated from the father to the son, he was instantly gelded; a woman kept from all company of men, and, if by chance having some such disease, she were found to be with child, she with her brood were buried alive; and this was done for the common good lest the whole nation should be injured or corrupted. A severe doom, you will say, and not to be used among Christians, yet more to be looked into than it is. For now by our too much facility in this kind, in giving way for all to marry that will give too much liberty and indulgence in tolerating all sorts, there is a vast confusion of hereditary diseases no family secure, no man almost free from some grievous infirmity or other, when no choice is had, but still the eldest must marry, as so many stallions oft he race; or if rich be they then full or dizzard

lame or maimed, unable, intemperate, dissolute, exhaust through riot, they must become wise and able to inherit. It comes to pass that our generation is corrupt, we have many weak persons, both in body and mind, many feral diseases raging among us crazed families; our fathers bad, and we are likely to be worse."

Dr. Talbot groups all types of degeneracy under the operation of the same general law. He adopts the definition of degeneracy given by Morel. According to Morel, a degenerate is one whose brain and nervous system are unstable from inherited or acquired taint in the parents, who has in consequence, undergone imperfectly the embryologic changes to a higher type in tissues or organs, and therefore exhibits tendencies liable to extinguish the race as a type under the usual conditions of the struggle for existence.

From a sense of scientific accuracy, no attempts have been made to demarcate rigidly abnormality from disease, or atavism from arrested development, except as may be done by the features of the cases in which the terms are used. The guiding principle adopted has been that the factors of degeneracy affect in the ancestor the checks on excessive action acquired during the evolution of the race, thus producing a state of nervous exhaustion. The descendant, in consequence, is unable to reach the state of the ancestor thus nervously exhausted.

The factors producing degeneration, act by causing nervous exhaustion in the first generation. This implies a practical degeneration in function since tone is lost. Every nerve cell has two functions, one connected with sensation or motion, and the other with growth. If the cell be tired by excessive work along the line of sensations or motion, the function as regards growth becomes later impaired, and it not only ceases to continue in strength, but becomes self-poisoned. Each of the organs (heart, liver, kidneys, etc.) has its own system of nerves (the sympathetic ganglia) which, while under control of the spinal cord and brain, act independently. If these nerves become tired, the organ fails to perform its function, the general system becomes both poisoned and ill-fed, and nervous exhaustion results. In most cases, however, the brain and spinal cord are first exhausted. The nerves of the organs are thus allowed too free play, and exhaust themselves later. This sympathetic exhaustion has local expressions in the testicle, and in the womb and ovaries. Through this the body is imperfectly supplied with natural tonics (antitoxins) formed by the structures and the general nervous exhaustion becomes still more complete. All the organs of the body are weakened in their function. Practically, the neurasthenic, in regard to his organs, has taken on a degenerative function albeit not degenerating in structure since the restlessness of the organs is a return to the undue expenditure of force, which occurs in the lower animals in proportion as it is unchecked by a central nervous system. Through the influence of various exhausting agencies, the spinal cord and the brain lose the gains of evolution and the neurasthenic becomes unadjusted to environment. Since the reproductive organs suffer particularly, children born after the acquirement of nervous exhaustion, more or less checked in development as the influence of

atavism is healthy or not, repeat degeneration in the structure of their organs, which in the parent were represented by neurasthenic disorder in function. As the ovaries of the neurasthenic women generally exhibit prominently the effects of nervous exhaustion, the offspring of these do not retain vigor enough to pass through the normal process of development.

All organic life to accomodate itself to its environment, has to meet three conditions. It has to remain *in statu quo* or advance or retrograde. To produce or influence every condition of mind or body in the human being three factors co-operate, the period of life, the state of mental and physical health at the time, and finally the environment. The human being under those five periods of change three of these are periods of evolution or development, and two are periods of evolution or practically periods of decrease in bodily vigor. Three of these occur during childhood, meaning by this term, all life before maturity, which is practically complete only at 25. The first period, practically the period of which the first dentition (teething) from its onset to its completion is the most striking physical manifestation, is a period of bodily evolution, during which the organism is not only striving to exist, but seeking to develop. Until balance is secured at maturity, struggle for existence in the body occurs not only between the different cells, but between the different systems. The nervous system being the latest developed, feels most these periods of stress.

During the evolution of the first teeth, stress often results from the struggle for existence between the organs themselves, or from proper diet sanitary environment or training, since from the onset of life training begins.

These are the guiding principles of the work, which is exceedingly condensed, and contains a mass of information in very small space. It is excellently illustrated. There is but one work which, for fullness of detail, can compare with it: Fere's "*La Famille Neuropathique*". This, however, is not so extended in scope. The criticism, which might be made, is from the popular standpoint, the extensive use of technical terms. These terms, however, are all carefully defined on being first used, and criticism for this reason is, hence, rather a cant than an evidence of defect. The author has made extensive uses of the researches of American physicians, and this has led, strange to say, to criticism by American medical journals. The British medical journals, noticeably the *Lancet*, have received the book with great favor. It is excellently issued by the publisher.

THE APHASIAS AND THEIR MEDICO-LEGAL RELATIONS. By F. W. Langdon, M. D., of Cincinnati, member of the American Neurological Society, the Neurological Society of London, is the most complete and expansive presentation of the subject we have yet seen. The book is interesting throughout. Following is an instructive table of aphasic disorders, which the author has devised: Table of the Aphasias, by F. W. Langdon, M.D., Cincinnati, Ohio. For the location of the lesion in each, see corresponding number on Figures 5 and 6:

APHASIA.

Emissive or "Motor"	Intermediate or "Conduction"	Receptive or ("Sensory")
Auditory Aphasia.....	1. Amnesia verbalis (Word-deadness).....	Non-recognition of word sounds.
	2. Amusia (Music-deafness).....	Non-recognition of musical sounds.
Visual Aphasias.....	3. Auditory Apraxia (Object-deafness).....	Non-recognition of object sounds.
	4. Alexia (Word-blindness).....	Non-recognition of word meanings. (May exist for printed and written words separately.)
	5. Visual apraxia (Object-blindness).....	Non-recognition of object-meanings or object uses.
	6. Visual amnesia (Pantomime-blindness).....	Non-recognition of word mimicry or idea mimicry.
Olfactory Aphasia.....	7. Cortical anosmia (Smell-memory loss).....	Non-recognition of objects by smell.
Gustatory Aphasia.....	8. Cortical ageusia (Taste-memory loss).....	Non-recognition of objects by taste.
Myotactic Aphasias.....	9. Myotactic alexia (Word-anæsthesia).....	Non-recognition of word movements by finger or pen.
	10. Myotactic amnesia (Pantomime anesthesia).....	Non-recognition of mimicry by touch.
	11. Myotactic apraxia (Object-anæsthesia).....	Non-recognition of objects felt.
Auditory Paraphasias'12	Paraphasia verbalis (Spoken-word forgetfulness).....	Non-re-collection of word sounds.
	13. Paramnesia (Musical-sound forgetfulness).....	Non-re-collection of musical sounds.
	14. Auditory parapraxia (Object-sound forgetfulness).....	Non-re-collection of object sounds.
Visual Paraphasias'15	15. Paralexia (Word-meaning forgetfulness).....	Non-re-collection of word meanings. (May exist for printed and written words separately.)
	16. Visual parapraxia (Object-meaning forgetfulness).....	Non-re-collection of object meanings.
Olfactory Paraphas'17	17. Parosmia (Smell-memory forgetfulness).....	Non-re-collection of smell meanings.
Gustatory Paraphas'18	18. Parageusia (Taste-memory forgetfulness).....	Non-re-collection of taste meanings.
Myotactic Paraphas'19	19. Myotactic paramnesia (Pantomime forgetfulness).....	Non-re-collection of mimicry movements.
	20. Myotactic parapraxia (Object-touch forgetfulness).....	Non-re-collection of feel of objects.
Concept Aphasias.....	21. Anomia (Name-memory loss).....	Non-recognition of names of objects.
	22. Par anomia (Name-forgetfulness).....	Non-re-collection of names of objects.
Spoken	23. Psychic motor aphasia (Spoken word construction loss).....	Loss of psychic spoken-word plans.
	24. Executive motor aphasia (Spoken word-utterance loss).....	Loss of spoken-word motor-memories.
Written	25. Psychic agraphia (Written-word construction loss).....	Loss of psychic written-word plans.
	26. Executive agraphia (Written-word utterance loss).....	Loss of written-word motor memories.
Panto ; imic	27. Psychic amnesia (Pantomime construction loss).....	Loss of psychic word-mimicry plans.
	28. Executive amnesia (Pantomime utterance loss).....	Loss of word-mimicry motor memories.

THE VITALITY OF EPITHELIAL CELLS, AND THE ETIOLOGY OF CANCER.

What the nature of the irritant may be that causes the localized over-growth of epithelial cells, which we call cancer, we are yet no nearer knowing than we were before the demonstration of its exact pathology, more than half a century ago. Notwithstanding all the claims that have been made of the causal influence of external biologic factors, parasites from bacteria, and fungi, schizomycetes, and blastomycetes to various forms of animal parasites, gregarines and protozoa generally, we are no nearer the solution of the problem than we were before.

Of late, the subject has been approached from the other side, the essential vitality of epithelial cells and their reaction to various irritants, and some most interesting results have been obtained by various observers. In Dr. Hektoen's review of this subject, for the first number of *Progressive Medicine** (the advance sheets of which are in our hands), we find some striking observations on the subject collated. Ljunggren, a Scandinavian physician, for instance, found to his surprise that he could preserve carefully sterilized bits of human skin in sterile human ascitic fluid for months, and that the cells of the tissues retained their vitality. Three months after their removal from the body, the cells of the deeper layers showed well-stained nuclei, and good protoplasmic structure. Successful transplantation was made with pieces kept in such sterile fluid for a month. Small pieces of the transplanted skin were removed at varying intervals, and it was found that a marked proliferation of epithelial cells showing many nuclear figures had occurred. Special precautions were taken, which absolutely assured the absence of cells that might have grown in from the surrounding cutaneous margin, and so vitiated the conclusions. The transplanted cells not only grew over the raw surface, but penetrated, also, into the granulation tissue beneath, after the manner of a beginning carcinomatous growth.

Almost more interesting and suggestive than this, are the observations make by Loeb here in America on epithelial regeneration. The abstract of them by Dr. Hektoen in *Progressive Medicine* is so clear and succinct that we copy part of it verbatim: "From the margin of a tissue-defect, huge epithelial protoplasmic or plasmodial masses move in a sliding manner over the naked surface, inclosing and dissolving the crust and other obstacles. Regenerating epithelium readily removes such substances as cartilage when placed in its way. Below the protoplasmic layer, epithelial cells wander in from the margins of the defect, and often grow down into the connective tissue, apparently checking the growth of the latter. The process is closely allied to changes in carcinoma. At the same time active changes, such as mitoses, occur in the epithelial cells, removed some distance from the margins of the womb. ** Loeb believes that the wandering of the cells, as outlined, is in response to stereotropism, and forms a determining inducing mitoses in the remaining cells". The pregnant significance of these observations, especially the apparent action at a distance of epithelial elements in

* *Progressive Medicine*, a Quarterly Digest of New Methods, Discoveries and Improvements in the Medical and Surgical Sciences. Volume I, No. 1, March, 1899. Edited by Hobart A. Hare, M.D. Lea Brothers & Co., New York and Philadelphia.

arousing epithelial cells into reproductive and germinal activity, can scarcely be overestimated. This is the essence of carcinoma, though in healthy subjects the vital resistance may be sufficient to restrain the morbid over-growth that would otherwise result.

According to Loeb, "if a small bit of epithelium is placed in the center of the crust covering a defect in the skin, it begins to send out processes in all directions into the crust, the cells acting as separate organisms, independent of blood supply or nervous influence". We are evidently closely in touch, in these manifestations, with the as yet inexplicable vital forces that we see at work in all their untrammeled energy and power in cancer. Further observations are needed to give the deductions from these observations practical application. They constitute, however, the most hopeful aspect of the present pathological work on cancer, as far as regards the near prospect of discovering its etiology. Their value as additions to biological science, especially to that mysterious problem, the struggle for life among the various cells of the body tissues, can scarcely be overestimated.

ATTAR OF ATAVISM—BEFORE A GROUP OF FAMILY MINIATURES. By *Cotsford Dick, in the London World.*

Progenitors of mine,
As I stand before your shrine,
Of thanks I will not hum you any hymns,
For it cannot be denied,
Without prejudice of pride,
I'm the essence of your weakness and whims.

Oh, grandsire, when you
Your system did bedew
With Madeira, did you never give a thought
To what stress of lemon squashes,
And saline and soda washes,
I, through gouty diagnosis, should be brought?

Great grandma, your taste
In porcelain and paste,
Which never by your prudence was repressed,
May have been pour quelque chose
Your scion to dispose
To extravagance in living, and the rest.

Oh, peevish dame and pale,
With fan and farthingale,
Sure the vials of your vapors I've unsealed,
In your milieu so exotic
And your humors so neurotic
Are the sources of my decadence revealed.

Prithee, had not you, sir knight,
Of complexion pink and white,

A very pretty power in your face
For fluttering the lives
Of other people's wives?
Now I wonder have I got that special grace?

To cut my burden short,
It is rather rough to thwart
A soul that would propriety pursue;
When I want to be a saint,
Says Hereditary Taint,
" Better do a little sinning," and I do!

—*Maine Journal of Medicine and Science.*

A NEW MEDICAL JOURNAL. *L'Intermediaire des Neurologistes et des Alienistes* is the name of a new monthly medical journal, designed to propagate neurological literature in three languages at once, German, French and English. Dr. Paul Sollier, formerly of Bicêtre and the Saltpétrière, is its editor-in-chief. Subscription—6 francs for France, 7.50 francs for other countries. Felix Alcan, Publisher.

An interesting and unique department in the new journal is a department of questions. Our valued contemporary, *Medicine*, notes the fact that this journal and the *Journal of Insanity* are not mentioned by the *L'Intermediaire*. Dr. Moyer, the distinguished editor of *Medicine* also notes as an interesting and unique phase of this new journal as follows: In the first number thirteen are given, from which we excerpt a very few, with the hope that they may prove suggestive to undergraduates who are eagerly searching for a topic for a graduation thesis, and for mature practitioners who earnestly desire the advancement of medical science.

No. 1 of these questions reads as follows: "Are there recent and general works about the question of synalgies and synesthesies?"

No. 4: "Are there experiments proving the plasticity of the peripheral cutaneous neurone?"

No. 5: "Has there been any use of the theory of Flechsig on the centers of projection and association to establish (1) a mechanism of ideation, (2) a mechanism of the language?"

No. 6: "Is the logorrhea which appears in the course of the abscess of the second gyrus temporalis a symptom of irritation or a simple reflex transmitted by the fasciculus longitudinalis anterior to the center of articulate language?"

No. 8: "Has any one made any distinction between the feeling of the self and the feeling of his own existence?"

No. 13: "I observe a case of hemiplegia with total facial paralysis in which the orbicularis is much more injured than the cases published by Miraille. Since those last other ones have they been described?"

The number "13" has been considered unlucky, and we think it may be somewhat responsible for the slight obscurity noted in the English of some of these quotations. If any of our contributors should be tempted to take them up, either for *Medicine* or for *L'Intermediaire*, we would especially call

their attention to the closing notice in the journal, which reads: "Considering the space required by the three-fold text, we should be much obliged to our correspondents if they would write their questions and especially their answers in the most possible short manner."

This unique enterprise will undoubtedly meet with approval and support from neurologists and alienists, but it is an unpardonable sin for any respectable periodical to omit reference to so well known a journal as the ALIENIST AND NEUROLOGIST.

A NEW COFFEE. The *Medical Times* remarks as follows on this subject:

It is an interesting fact that chemically, milk and grape juice are almost identical, and that the nutritive qualities of both are almost the same, a pint of each being equivalent to at least a pound of meat. In what is supposed to be the active principle of the two great domestic drinks of the world, coffee and tea, we find a like chemical similarity existing between caffein and thein, both to a certain extent stimulants, and both having the power of checking the waste of nutrition until the full power of the food has had time to exert its influence on the elements of life and strength. It is for this reason that the miner can accomplish so much hard work, when for breakfast at least his principal food is a pot of coffee and a crust of bread, and many a business man goes to his morning's work with no other nourishment than a cup of coffee and a roll.

The action of tea and coffee, although differing to a certain extent, yet undoubtedly reach their results through the same physiological line; the same as ignatia and nux vomica, the active principle of both of which is strychnine.

It has been generally supposed the narcotic principle of coffee, which at times produces positive toxic, or drug action, is caffiene, and that the stimulating effect of the beverage is owing to the 1 or 1.5 per cent. of that alkaloid which it contains, but recent scientific investigations show that this is true only in part, as much of its beneficent action can be traced to the aromatic substance contained in the bean developed in roasting, giving the delicious aroma, in which caffiene has no part.

A variety of coffee grows wild in the island of Bourbon, bearing the name of caffé marron, which, while it contains no caffiene, still has to a certain extent the odor and the stimulating effect of the coffee of commerce. This coffee lacks much of the delicate and fragrant aroma of the best grades of coffee, but it must be remembered that the shrubs grow wild and have never had that cultivation so essential in developing the highest qualities of any product. In time, under proper cultivation, this, to us, new product, may and probably will, have the delicate flavor and much of the stimulating properties of our best grades of coffee, without any of their deleterious effects. The immense territory in the West Indies and the Philippine Archipelago, which through the triumphs of our arms has recently been opened to a higher civilization and a more energetic progress, will yield a rich return in the products now confined to a limited area and daily becoming more important to the arts, the industries and the food of the world. Not alone the coffee in its various varieties, with or without caffiene, improved by culture,

but the cinchona, the india rubber and many of our most valuable drugs, can be produced in a great abundance, and of as fine a quality in the territory now open or soon to be opened to our enterprises and industry, as in the narrow limit in which the produce has been confined.

Both Cuba and the Philippine Islands will undoubtedly in time form independent governments, but into both will have been introduced the energy, the enlightenment of that American nation, which broke the shackles of their slavery and their debasement, and rendered it possible for them to develop free institutions, and the general education of the people to develop the resources of a country the possibilities of which have no superior in the world.

THE PHYSICAL STATUS OF PROPHETS. The *Maryland Medical Journal* for April editorially says: The tendency of modern times is to explain or to attempt to explain, everything, and busy investigators do not spare the sacred book in their endeavors to clear up, according to our modern light, the occurrences narrated there.

Dr. James Weir, Jr., of Owensboro, Ky., has contributed an article to the *Denver Medical Times* in which he asserts that, judged by modern alienism, many of the prophets, both major and minor, and of sacred as well as profane history, were undoubtedly the victims of mental dyscrasias. This he not only attempts to prove from sacred history, but by what Egyptologists and Assyriologists have given us through long and faithful study. The ancients believed that the insane were the especial wards of divinity, and this belief is still current at the present day among some of the Eastern nations. The insane man was supposed to be in direct communication with God. The ancient Hebrews used the same word to designate the religious lunatic and the holy prophet. Saul was troubled by an evil spirit, and "prophesied" is translated now as meaning that he was a lunatic and raved. He was seized by religious mania at times, especially when he sent for David to soothe him with his harp and hurled javelins at him. It was then his friends said, "Is Saul among the prophets?" meaning "Has Saul become insane?"

In the same way the author explains the peculiar performances of Ezekiel, Hosea, Isaiah and Jeremiah. He even goes so far as to say, which, of course, has been said before, that the Revelations of St. John were evidently the result of mental dyscrasia, supposing, of course, that John thought he saw these things, but if he is only speaking metaphorically then no charge of insanity can be brought against him. He thinks that Saul, afterwards called Paul, was a victim of epilepsy.

In later times such men as St. Anthony, Ignatius Loyola and Francis de Assisi were also victims of insanity. Jeanne d'Arc, Savonarola, Luther, Huss, Joseph Smith, Swedenborg, Mahomet and many others were also mentally unsound, and much has been written of the insanity of Richard Wagner. While the writer does not bring forward anything especially new, it is interesting in that it shows that eccentric and especially clever persons were looked upon as mentally unsound. The alienists at the present day leave no ground, however sacred, untouched, and they attempt to explain from our present knowledge many things formerly obscure and mysterious.

THE INSANITIES OF INEBRIETY FROM THE LEGISLATIVE AND MEDICO-LEGAL STANDPOINT. By J. F. Sutherland, M. D., F. R. S. E., Deputy Commissioner in Lunacy for Scotland. Reprinted from the *British Medical Journal*, September 10, 1898.

In this paper Dr. Sutherland reviews briefly the history of legislation on the subject; statistics of inebriety in town and country; the attitude of the law; crimes of blood, forms of insanity produced by inebriety and under the caption, "The Liberty of the Subject," stated that a jury was not mentioned in a recent bill providing for control of inebriates and it was alleged that a door was being thrown open for what the French called *chantage*, not much different from blackmail, and further remarks "in regard to this far-reaching question to assume the *non possumus*, and to say that it is beyond the wit of man to devise a scheme adequately safeguarding the rights and liberty of the subject and as adequately as many of our present civil and criminal statutes which break in upon individual liberty is unworthy of our race and of our age. The liberty of the subject has with a few become a fetish. A law which will prevent and lessen the physical and moral degradation of the individual, the wreckage of family life, and what is a disgrace to the community and commonwealth can in no reasonable sense be considered an invasion of liberty."

He thinks that the French system of *conseil de famille* might be adopted for commitments with advantage, and the appointment of a curator for "pay day" drunkards for the sequestration of wages for behoof of dependents.

DR. WOOD, OUR MEDICAL HERO. We abstract with pleasure the following from an editorial in the *Philadelphia Medical Journal*: Dr. Wood, our medical hero, by his work and personality, suggests many useful lessons to our profession. He has done much to elevate the profession in the world's estimation, and has done it in the truly professional spirit of modesty, ability and intelligence. Everyone has recognized that his heart has been in his work, that he was interested solely in the task given him to do, and not in himself or his fame. He has taught every official in the government service the lesson of unselfishness, and has unconsciously shown every ambitious young man that the way to the truest and most lasting success is self-forgetfulness and devotion to duty. Possibly few will be able to learn the lesson, but we trust that very many will learn it. The fact that strikes us with peculiar force is that Dr. Wood (let the world call him General if it will; for us, the higher title of physician is preferred) has most admirably illustrated the close dependence of true government upon sanitation and the health of the people. There is no duty superior to that devolving upon us of making the world know that politics, in its last analysis, is hygiene. To this end all righteous legislation and effective administration finally and inevitably lead. With or without expansion and imperialism, disease is the scourge that is leading the nation to unity and teaching the truths of altruism.

THE NEEDS AND RIGHTS OF OLD AGE. By I. N. Love, M. D., St. Louis, Mo. Reprinted from the *Journal of the American Medical Association*.

November 20, 1897. We do not know why Dr. Love has sent us for the second time a copy of this valuable brochure unless it is from solicitude for our welfare under the mistaken belief that we are growing old and do not know our rights, or knowing do not "dare maintain." The last time we saw Love he had a pocket full of these treatises and was presenting them to his friends promiscuously. Even Col. Reed and Frank Foster, youthful as they are, each got a copy and we thereby felt our youth renewed like the eagles, to be classed with these youths.

ERSTER BAND, I. ABTHEILUNG. MIT 63 TEXTABBILDUNGEN. Verlag von J. F. Bergmann, Wiesbaden, Preis Mk. 6,—. The value of the symptomatic expressions of the eye is so great that no. neuro diagnostician can afford to be without this book. The neural diseases of the eye, too, are many. The eye is a part of the nervous system. Its neuropathic states, both structural and functional, concern the neurologist and alienist quite as much as they do the ophthalmologist. The knowledge of the neurologist should be farther extended into ophthalmology, and that of ophthalmology farther into neurology, that ophthalmologists may better know the limits of ophthalmological resource, and the time and place for neurological treatment when the eye is involved.

THE JURISPRUDENCE OF INTOXICATION. By J. F. Sutherland, M. D., F. R. S. E., Deputy Commissioner in Lunacy for Scotland. Reprinted from the *Juristical Review*, July, 1898, Edinburgh. This is an able essay of fifteen pages urging a revised and more humane consideration of the vice and disease of inebriety by legislators. It is an encouraging sign that agitation of this subject proceeds among the more enlightened members of our profession, and, let us hope, not without results in the future.

THE ARCHIVES OF NEUROLOGY AND PSYCHO-PATHOLOGY. The third number of the first volume, issued from the State Hospitals Press, in Utica, in February, is on our table. It consists of 200 pages. Studies on Ganglion Cells, by Dr. James Ewing, Bibliographical Contribution to the Cytology of the Nerve Cell, by Dr. Smith Ely Jelliffe. An article by Dr. Ewing is illustrated with six beautiful plates in colors. These volumes are indispensable to the student of psycho-pathology and psychiatry, though we do not coincide with the editorial view expressed in the first volume that psychiatry can only be learned through cerebro-pathology; symptomatology and cerebral physiology are as indispensable as pathology.

SAJOUS' ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE, VOL II, BROMIDE OF ETHYL TO DIPHTHERIA. Edited by Chas. E. de M. Sajous, M.D., assisted by one hundred associate editors. F. A. Davis Company, publishers, Philadelphia, 1899.

The second volume of this important work amply meets our high expectations based on the reading of the first volume. The articles are all well chosen and practical, especially useful to a busy practitioner. This book puts latest facts in a satisfactory form for ready reference. Sajous' Annual lightens the literary labor of the studious physician. It enlarges his medical knowledge with the least possible labor to him. It is a good thing to

have some one cull for us, as Sajous' Annual does, the wheat from the chaff of current medical writings.

THE "ANTIKAMNIA" CALENDAR for 1899 came near scaring the life out of us. It is an artistic skeleton sketch calendar. The past year has been suggestive of many subjects for these sketches, which make the 1899 calendar of more than usual interest. Every physician in the country will shortly receive one.

THE STORY OF OUR FLAG. By Addie Guthrie Weaver, Illustrated, Chicago. Author, publisher. Mrs. Addie Guthrie Weaver has done a timely and patriotic service in writing a new and authentic account of the circumstances attending the making of the first United States flag. As most Americans know, the first flag with stars was made by Betsy Ross. Mrs. Weaver, through a family relationship with one of Betsy Ross' descendants, and private letters and documents throws more definite light upon the subject. Mrs. Weaver says:

It was in the latter part of May, 1776, that Washington, accompanied by Colonel George Ross, a member of his staff, and by the Hon. Robert Morris, the great financier of the revolution, called upon Mrs. Betsy Ross, a niece of Colonel Ross, a young and beautiful widow, 24 years of age, and expert at needlework, to engage her services in preparing our first starry flag. She lived in a little house on Arch street, Philadelphia, which stands to-day unchanged, with the exception of one large window, which has been placed in the front. It was here, in this house, that Washington unfolded a paper on which had been rudely sketched a plan of a flag of thirteen stripes, with a blue field dotted with thirteen stars.

Here Betsy Ross was commissioned to make the first flag of English bunting. The flag was made at once, and in Washington's letter of May 28, 1776, to General Putnam at New York, may be found positive instructions "to the several Colonels to hurry to get their colors done." The committee approved the flag finished by Mrs. Ross, and instructed her to procure all the bunting possible in Philadelphia and make flags for the use of Congress, Colonel Ross furnishing the money.

Mrs. Weaver writes interestingly about the various colonial flags, giving a succinct and instructive summary of the various steps of national expansion, including the taking of the Philippines. The book contains excellent colored illustrations of our different flags, and of Washington's coat-of-arms.

DIED WITH HIS LIPS SEALED. The *Texas Medical News* records the following: Cumberland, Maryland.—James H. Hamrick, aged 76, died near Parsons, W. Va. He was famous because of his knowledge of embalming, having, it is claimed, revived the Egyptian process. His modest home was visited by scientific men, who wondered at his art of preserving, which he claimed to have gained from the Bible, but he guarded his secret, and died leaving it untold. The house and surroundings present a ghastly sight. There are women mummies almost as natural as life. The bodies were secured from the State insane asylum ten years ago and are enclosed in glass cases. A negro's head, secured in 1890, from a Cincinnati medical

college, is exposed on plaque, the head and flesh being soft and pliable. About the exterior of the house and on trees are preserved birds and squirrels, while here and there in the yard is a snake coiled up as if to attack.

THE ALMA SANITARIUM, Alma, Mich., offers for sick people, or persons desiring rest, every comfort, the most scrupulous care, the most healthful and enjoyable pleasure, the constant attendance of skilled physicians, the benefits of Alma-Bromo, the strongest natural bromide mineral water known. A positive remedial agent for the relief of rheumatism, skin, kidney and nervous diseases and constipation. Liberally managed in every respect. Physicians will here find agreeable surroundings and congenial people. Send for beautiful illustrated book.—*Alma Literature*.

SOME OF THE NEWER PHARMACEUTICALS. It is painfully surprising to find how few practitioners, comparatively speaking, recognize the true value of the newer and more elegant pharmaceuticals furnished us by the manufacturing pharmacist. Twenty-five years ago the remedies for pulmonary tuberculosis were such drugs as arsenic, chlorate of potash, fusel oil, etc. They were regarded as remedial agents. Those of us who have used creosote in this disease, know its value is far superior to the other remedies mentioned. Now we have as derivatives, *sosot* and *geosot*, which are so much better. In addition to this treatment many like to give Fellow's or Robinson's syrup of the hypophosphites, and as a food bovinine. If insomnia is a concomitant or in any case where a hypnotic is desired, *trional* in ten to fifteen grain doses will answer admirably or *bromidia* in teaspoonful doses. When a chalybeate tonic is necessary *pepto-mangan*, (Gude) is an excellent one and will give satisfactory results.

What a change has taken place in recent years in infant feeding. With Fairchild's peptogenic milk powder we can in many cases accomplish wonders that in former years would have put us at our "wits' end."

Some physicians have come to regard *ergot* as a back number but there are many conditions in which it is more than useful. P., D. & Co.'s Ergot aseptic will not fail you when there are indications for its use.

Protosol is coming to the front in the treatment of conjunctivitis, and as an injection for gonorrhœa. It is regarded as one of the best of the new silver products. Antiphlogistine ranks high as an antiphlogistic; it is a splendid preparation and as a poultice has no equal. As tonics for debilitated states the various preparations of Cod liver oil in combination with other drugs are very useful. Hagee's cordial is as good as any. *Arsenauro* has proven quite valuable in the convalescence of acute and chronic diseases of the nervous system. Constipation is usually a trouble—some symptom in most diseases. For its relief the new remedy *Flikulax* has proven very effectual. Many other new and important preparations deserve favorable mention, but for want of space must defer them until some future time.—*Kansas City Lancet*.

THE AMERICAN X-RAY JOURNAL. This meritorious special diagnostic periodical comes to us regularly and each number displays the initial energy of its accomplished editor, Dr. Heber Robarts, and the growing merit of its pages to the surgical diagnostician. The *American X-Ray Journal* has now a permanent place in diagnostic medicine and surgery.

VIN MARIANI IN EXHAUSTION. *The St. Louis Medical and Surgical Journal* March, 1899, thus commends Vin Mariani: We have had occasion in numerous instances to administer "Vin Mariani" to business and professional men. The work of the office, the cares and worry entailed by business and the flaccidity brought on by overwork, all seemed to give way completely in a marvelously short space of time, despite the fact that the subjects continued uninterruptedly at their usual occupations. The notable fact to be observed is that in each instance the effect was permanent.

PHILLIPE PINEL, of France. Science, Philosophy, Courage, Humanity, all in One Person. Profound Honor and Gratitude from an American Citizen. J.M.B. This is an Easter tribute to the immortal alienist, who made for medicine the brightest record on its glowing page of philanthropy, by J. M. B., J.M. Barnard, of Milton, Massachusetts. It presents a beautiful frontispiece of Fleury's great painting of that immortal scene at Salpétrière, representing the great alienist striking the shackles off the chained inmates of that historic institution. With it is presented also a tribute to other reformers in Psychiatry, and accompanying it, is a eulogy of Pinel, by Rev. Francis Tiffany. The name of Chiarugi, a contemporary reformer, is omitted, and that of Weir Mitchell added to a worthy list of American alienists. Unfortunately, Weir Mitchell being only a neurologist, without practical alienistic knowledge, has suggested some retrograde reforms, and has done American Psychiatry and the cause of the insane no good.

Dr. Havelock Ellis.—We learn with regret, which will, we feel, be shared by all the scientific world, that this gifted author has decided not to publish, in England, his great work on "Sexual Inversion," or the completion of his series of announced volumes on the Psychology of the Sex, of which only the initial volume has appeared.

This action has been due to the conduct of his publisher, Mr. George Bedborough, who was indicted for the selling of the work as "wicked, lewd, impure, scandalous and obscene," and who, although Mr. Ellis had retained eminent counsel and raised a considerable sum of money to provide for the defence, shortly before the trial came on, last October, without consulting those whose support he had accepted, plead guilty to a part of the charge, and Mr. Ellis and his counsel were unable to obtain even a hearing upon the trial; and the defendant, in pursuance of an arrangement made with the prosecuting counsel and the Recorder, (Sir Charles Hall), was discharged upon his own recognizance.

It is incredible that such scandalous conduct, on the part of the authorities and the Recorder, should pass unnoticed and unrebuked.

The animus of the Recorder might be in doubt, if it were not for his language on the occasion. He said from the bench to the prisoner: "You might at the outset, perhaps, have been gulled into the belief that somebody might say this was a scientific book. But it is impossible for anybody with a head on his shoulders, to open the book without seeing that it is a pretence and a sham, and that it is merely entered into for the purpose of selling this filthy publication."

This officer has never been credited with being a person of any scientific attainments. That his education upon such questions has been seriously neglected is established by his own testimony.

It is doubtful if any scientific authority on the continents of Europe or America, or in the British Islands, would agree with the language he used. He has, by an illegal and reprehensible abuse of his position, consented to the substantial release of the publisher, without punishment, whom he believed was guilty of the crime, and stabbed in the back, and without any excuse or opportunity of being heard, one of the most brilliant of the British writers, of his time and our era, on subjects connected with criminal anthropology; and no matter what his past career or character may have been, he will receive, as he justly deserves, the contempt of the whole scientific world.

The honorable career of Dr. Havelock Ellis cannot be seriously compromised by such an unmerited assault from the bench, and it is a marvel how our English cousins, with their love of fair play, would submit to such aspersions upon the motives of a gentleman of Dr. Ellis' character.

There can be no doubt that Dr. Ellis made a serious mistake in selecting his publisher. Mr. Bedborough may have been a dealer in obscene books, and a *persona non gratia* with the Court or the authorities. It is stated that he has published a magazine devoted to the propaganda of unconventional views upon marriage, and the book of Dr. Ellis may have been, in the judgment of the authorities and the Recorder, tarred with the same stick with Mr. Bedborough's other publications—we do not know. Even were this so. (which was, as we think, a grave error on the part of Dr. Ellis), it would not change the character of the unjust accusation made against the work by the Recorder, but would bear in mitigation and explanation of the judicial utterances; but the lesson to Dr. Ellis, and to writers generally, would remain, that authors, as well as men, are known and judged by the company they keep, and Dr. Ellis may, like poor Tray, have been cudgelled by reason of his unfortunate environment.

L'INTERMEDIAIRE des Neurologistes et des Aliénistes, organe International Trilingue de Neurologie, Psychiatrie, Psycho-Physiologie, Dirigé par Le Dr Paul Sollier, Ancien interne des Hôpitaux de Paris et des Hospices de Bicêtre et de la Salpêtrière Médecin du Sanatorium de Boulogne-sur-Seine. Paraisant le 10 de chaque mois. Prix de L'Abonnement Annuel. Paris et Départements, 6 fr. Etranger, 7 fr. 50. Prix du Numéro, 60 Centimes. Paris, Félix Alcan, Editeur, 108, Boulevard Saint-Germain.

NEW METHODS Employed for the Relief of Impaired Hearing, Especially the Use of the Phonograph, Vibrometer, Vibrophone and Metronomic Ear Masseur. Read before Philadelphia County Medical Society, May 23, 1894. By Louis J. Lautenbach, M.D., Ph.D., Philadelphia, Surgeon to the Pennsylvania Eye and Ear Infirmary; Nose and Throat Physician to the Odd Fellows' Home; late Chief of the Eye Clinic of the German Hospital, etc.

CHRISTIAN SCIENCE, A Sociological Study. By Charles A. L. Reed, A.M., M.D., Cincinnati, O. The History, Philosophy and Methods of Christian

Science, and the Law Governing its Practice Considered, in a well printed 12 mo. book, handsomely bound in paper. Single copies, 10 cents; 12 copies, \$1.00. Sent postpaid on receipt of price. McClelland & Co., Publishers, The Groton, Cincinnati, O.

The Bertillon Classification of Causes of Death. Recommended for the use of Registrars of Vital Statistics (after the First Revision of Paris 1900). By the American Public Health Association and by the Conference of State and Provincial Boards of Health of North America. Issued under the auspices of the American Public Health Association.

Deaf Mutes: Can They be Made to Hear? Read before the Pennsylvania State Medical Society, May 2nd, 1895. By Louis J. Lautenbach, A. M., M. D. Ph.D., Philadelphia, Surgeon to the Pennsylvania Eye and Ear Infirmary; Nose and Throat Physician to the Odd Fellows' Home; late Chief of the Eye Clinic of the German Hospital.

Progress of Medico-Legal Surgery. By Clark Bell, Esq., LL. D., Honorary Member International Association of Railway Surgeons, Honorary Member New York State Association of Railway Surgeons, President International Congress of Medical Jurisprudence, Honorary Member American Association Physicians and Surgeons.

A Case of Concentric Displacement of the Heart to the Right, Presenting Some Unusual Features. By Charles Lyman Greene, M.D., of St. Paul, Minn., Clinical Professor of Medicine and Physical Diagnosis; and J. L. Rothrock, M.D., of St. Paul, Minn., Clinical Instructor in Pathology in the University of Minnesota.

Intradural Spinal Tumor Opposite the Body of the Fourth Dorsal Vertebra; Complete Paralysis of the Parts Below the Lesion; Operation; Recovery, with Ability to Walk Without Assistance Within Three Months. By J. T. Eskridge, M.D., and Leonard Freeman, M.D., Denver, Colo.

Clevenger's Medical Jurisprudence of Insanity. Two Octavo Volumes, 1,300 pages; best law sheep, \$12.00; cloth, \$10.00. Lawyers Co-operative Publishing Co., 508 Rand-McNally Building, Chicago. Rochester, N. Y. 79 Nassau Street, New York.

Remarks on the Treatment of Neurasthenia. By Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic; Associate Professor of Nervous Diseases, Northwestern University Medical School; Neurologist to the German Hospital, etc.

The Science of Medicine and Its Relation to the People. An Address before the Marion County Medical Society, December 20, 1898. By Henry Jameson, B.S., M.D., Professor of Principles and Practice of Medicine, and Dean of the Faculty of the Medical College of Indiana, Indianapolis, Ind.

Notes on the Absorption *versus* the Digestion of Milk. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital and Consulting Physician to the New York Hospital, etc.

On a New Method of obtaining a Black Reaction in certain Tissue-Elements of the Central Nervous System (Platinum Method). By W. Ford Robertson, M. D., Pathologists to the Scottish Asylums.

Pathogénie et Pronostic du Delirium Tremens par Le Dr Villers, Aide du service de psychiatrie de l'hôpital Saint-Jean. Extrait du Bulletin de la Société de Médecine Mentale de Belgique, 1898.

Diseases of the Ear as a Specialty. By Emil Amberg, M.D., Detroit, Michigan, formerly Aural House Surgeon, Massachusetts Charitable Eye and Ear Infirmary, Boston, Massachusetts.

The Use of Nosophen and Antinosine in Purulent Disease of the Middle Ear. By Frederick H. Millener, M.D., Buffalo, N. Y. Reprint from *Buffalo Medical Journal*, December, 1898.

Locomotor Ataxia in Its Modern Aspect. By F. W. Langdon, M. D., Cincinnati. Read before the Mississippi Valley Medical Association, at Louisville, Ky., October 6, 1897.

The publication of the *Kansas Medical Journal*, Topeka, has been discontinued and in its stead will appear the *Medical Monograph*, under the same editor, Dr. William E. McVey.

Cocaine Addiction and Its Diagnosis. By Stephen Lett, M.D., M.C.P. and S. Ont., Medical Superintendent of the Homewood Retreat, Guelph, Ont.

Criminal Abortion and the New English Criminal Evidence Act. By Clark Bell, Esq., LL. D., of the New York Bar. Case of John Lloyd Whitmarsh.

Nagra Synpunkter Beträffande Förhållandet Mellan Syphilis och tabes avvensom Behandlingen af tabes. Af E. A. Homen, Helsingfors, 1897.

The Rationale of Balneo and Mechano-Therapeutics (Schott Treatment in Chronic heart-Diseases. By Albert Abrams, M.D., San Francisco.

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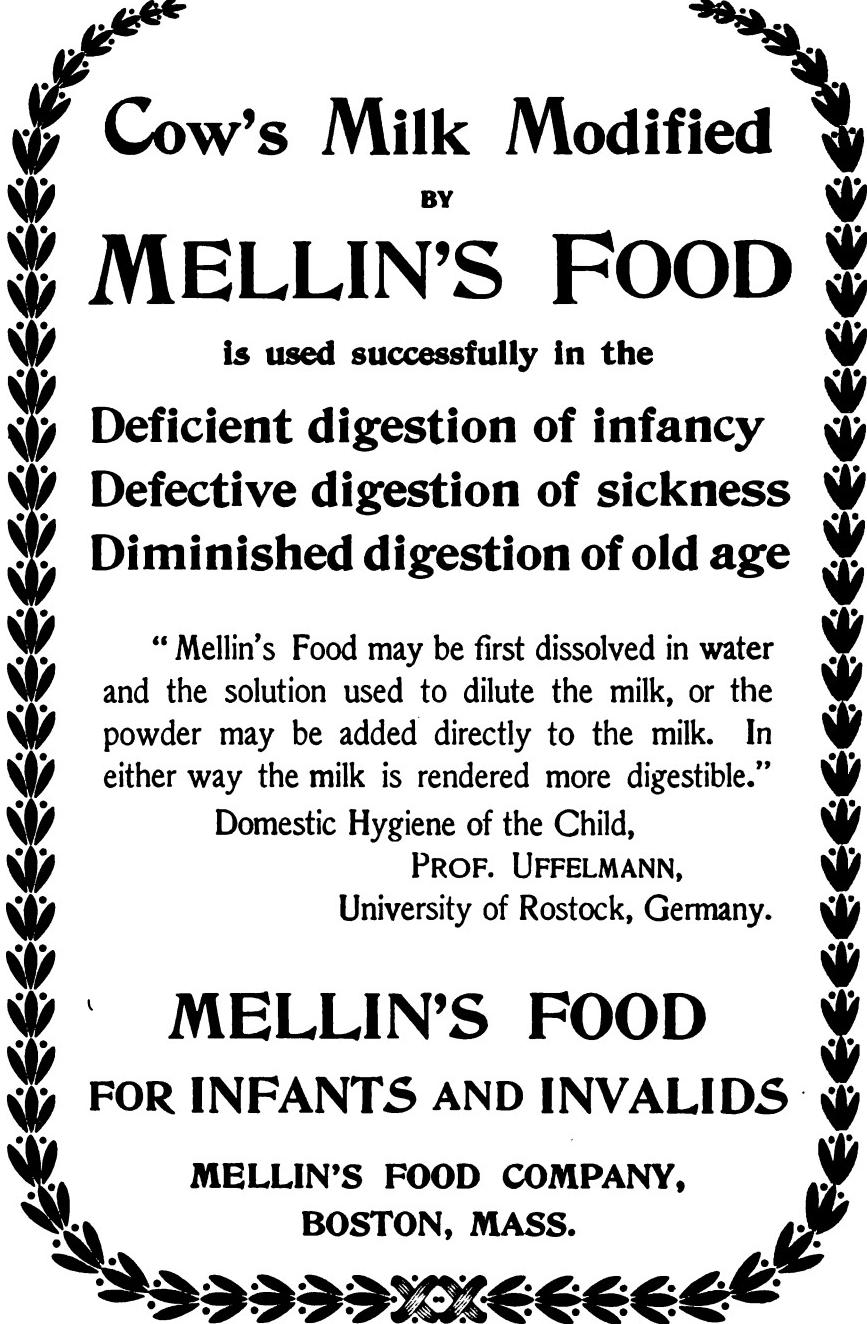
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No. 3.

ORIGINAL CONTRIBUTIONS.

**OUTLINE OF PSYCHIATRY IN CLINICAL
LECTURES.***

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

By DR. C. WERNICKE,
Professor in Breslau.

V.

THE BODY A PART OF THE WORLD. CONSCIOUSNESS OF THE BODY A FUNCTION OF THE CENTRAL PROJECTION FIELDS. ORGANIC SENSATION AND SENSORY CONTENT OF SENSATIONS. AFFECTIVE TONE OF THE SENSATIONS. THE LARGE VISCERA ARE REPRESENTED IN THE CONSCIOUSNESS OF THE BODY.

OF what significance the views now gained have for our subject, I can again best show you by a simple example. Assume that some one awakens from profound sleep or pathological unconsciousness. You can now perceive the sign, that his organ of consciousness again functionates in his recognition of the world and the deductive processes occurring normally. The consciousness of the

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L. I., New York City.

world was lost to the person asleep, or rather, it had not functionated so long as the unconsciousness lasted.* But after it has returned how does the person previously unconscious behave? We notice that he corrects an uncomfortable position he has assumed, that he feels of his body to be convinced of its condition, and that his interest is essentially directed to his own body. The *consciousness of the body* has returned, and now we must keep this process more closely in mind.

If the proof was given above, that only by means of the projection system sense impressions and hence reports from the world reach our brain, so the simplest consideration teaches that it is true of parts of our bodies. Only by the nerve paths, which unite a definite part of the body, for instance the arm with the brain, is the brain connected with it; if they are interrupted, as is often observed in mechanical injuries, so anything can happen to the part of the body, it can be pressed upon, pricked, pinched, bruised or burned without the least perception of it being conveyed to the brain and reaching the consciousness. Such occurrences are most often observed in the arm, owing to the brachial plexus being relatively superficial and so the most subject to the action of external violence.

As this example may be applied to all other regions of the body, hence it is true in general that the integrity of the nervous system is essential for perceptions of our body to occur. The unconscious person, whose brachial plexus is destroyed, can no longer identify the arm as his own on awaking. Consciousness of the body hence seems in general to be a function of the sum of the nerves of feeling, or in other words of the projection system. Meynert's remark, referring to the significance of a transverse section through the projection system at the level of the cerebral peduncles, also applies to the consciousness of the body; only the bodily perceptions from the retina and olfactory organ could occur if this operation could be performed.

*The contrast of functioning and latent consciousness will repeatedly oppose us, they correspond apparently to different states of one and the same anatomical basis. Therefore we have not the least reason to go further into it at present.

Fancy that in place of this section, which cannot be actually performed, another operation could be made, which is as little possible, but just as conceivable as the other. The calvarium is opened, the brain gently lifted from the base of the skull and, without sustaining incidental injuries, raised above the calvarium; blood vessels, nerves, medulla and spinal cord must have sustained no injury by this stretching process. Then the brain appears to us in its true form, as the real sentient and moving being, only equipped with a machine, which furnishes the apparatus for the reception of sensory stimuli, for the execution of movements, but in relation to the brain constitutes a part of the world, only that this is inseparably united to the brain. Sense impressions, then as before, would become conscious, only slightly retarded, movements would be possible just as formerly, only the transmission of the command would take more time. The brain then could be compared to a zoophyte, as Meynert has exemplified, which is provided with antennae, sense nerves, and with tentacles, the nerves of movement. That these antennae are equipped with a complicated sense apparatus, these tentaculae with a special motor apparatus, the muscles attached to a skeleton, does not prejudice the value of the comparison.

The consideration we had advanced with respect to the sense impressions, will apply entirely to our body. The consciousness of the body is first acquired, and like the consciousness of the world, in that reports from the most diverse parts of the body reach the brain in its central projection fields and their residues leave memorial images.

A part of these projection fields are known to us grossly, and localized in definite places of the cerebral cortex. There can be no doubt that each of the cortical areas experimentally determined by Munk, which he has named arm region, leg region, head region, ear region, trunk and neck regions, have the importance of central projection fields for these parts of the body. That these experiments are transferable to the human brain, human pathology furnishes incontestable proof, if the more exact boundary of the regions in man is still to be expected. In my opinion,

there can no longer be any doubt that each region represents the total sensibility and motility of the part of the body named, the arm region the central projection field for sensation and motion or, in other words, all the nerves of the arm.

Then a relation arises, which deserves our undivided attention. All these regions of the body are clothed with the tactile organ of the skin, its central projection fields hence contain the representation of sense surfaces. On the other hand the representation of the body in the "consciousness of the body" will not seem complete if the central projection fields of the special senses are disregarded, for the olfactory mucous membrane, the retina, the organ of hearing, the mucous membrane of the tongue and pharynx serving taste, although for special sense functions, always constitute the most important parts of our body. Therefore, we will have to place the consciousness of the body for these organs, if a special projection field is not demonstrable (as e. g. for the mucous membrane of smell and taste by certain branches of the fifth), in central projection fields already familiar to us, so that our cortex is quite well supplied with a consciousness of the world and consciousness of the body. We here meet with relations of a more complicated kind, which necessitate our return to the most elementary process of simple modal sensation.

What we had previously learned of sensation, and what furnishes the material for the construction of a consciousness of the world, we may term sensory content of the sensations. But it must be evident to you that every sensation possesses another quality, which we have until now intentionally neglected, and which is generally differentiated as the affective tone of the sensation from its sensory content. This affective tone of the sensation is especially closely related, as I hope to convince you, with the consciousness of the body, in that it is differently colored according to the place the stimulus acts and so in a measure furnishes a local sign for the consciousness as to which part of the body has been affected by the sense stimulus. The sensations, which are combined with an intense affec-

tive tone, show a close relation to the mechanisms of movement, which properly co-operate and apparently serve for the protection of the body. We do not usually take heed of these *organic sensations*, they escape us, as our attention is occupied with the sensory content of the sensation. Still somewhat stronger stimuli act on our consciousness, so that we neglect the sensory content and turn our attention to the organic sensation of the part of the body concerned. But usually appropriate movements of defense occur previously. A few examples will show this. Fancy that you are unexpectedly touched on the arm, perhaps in a crowd, you immediately think of a person or object from which the contact has come, according to its kind. If you are struck violently, so that it causes pain, you draw back the arm and try to protect yourself from further injury. Your attention is then turned to the part injured. It is much the same with loud noises. Everyone jumps back when a shot is fired unexpectedly close to the ear, and no one is able to stand in close proximity to a passing express train, even if he knows there is no danger. Here it is essentially the din which produces the intense organic sensation and causes the involuntary recoil. A simpler form of movement of defense, closure of the eye, we observe from the action of bright light, particularly when it occurs suddenly in the dark, and under these conditions it is painful. On organic sensation also depends the first adjustment of the eye to the point of illumination by a mechanism of movement, which I have already mentioned in speaking of the visual ideas. All these examples of movement cited, first of a simple, then of a more complex sort, we will have to consider in Meynert's sense as movements of defense and offense, and remember that their original source is to be sought in suitable congenital reflexes. I will mention Pflüger's celebrated experiment in which the decapitated frog is not only capable of movements of defense, but even of appropriately modifying them, as in wiping off the acid applied to the skin, it uses the opposite leg as soon as the one on the side irritated is cut off. These modifications may be the acquirement of the individual, they always

occur through the gray matter, to which we essentially ascribe a reflex action, and there can be no doubt that certain congenital reflexes are appropriate in the person and serve for defense, to say nothing of the lower animals with predominant spinal organization. The lowest organized vertebrate shows within this organization more than simple reflex movements, in that it, like the decapitated frog, possesses the ability of certain appropriate adjustments. But where a powerful cerebrum exists, as in mammals and especially in man, we see similar mechanisms of movement transferred to the central projection fields of the cortex (as it has been shown experimentally e. g. by Munk in the movements of the eye). The appropriate modification of the movement is to be observed in both cases according to the place on the body affected. It shows us that the chief purpose of the organic sensations is to protect the body.

The local signs of the retina referred to above in speaking of the visual ideas, may now appear to you in a new light. They apparently spring from the organic sensations of the retina; for we saw that the sentient retinal elements act on the motor mechanism of the cortex according to their position, that the fovea centralis is always turned to the stimulus, and therein a movement of defense or offense in Meynert's sense must be perceived. In fact, it must prove equally useful in the animal kingdom for defense as for attack. If it has been made use of above to explain the origin of visual ideas, so we have really anticipated; the acquirement of a spatial image of the retina must precede this act in our consciousness of the body. By the fact that the perceiving cells of the optical projection field related to the retinal points are allied by association in different points of the motor-oculi projection field according to the retinal meridian, different grades of intensity of their excitement according to the distance from the centre of the retina, a firm orientation as to the position of the retinal points and thus a spatial image of the retina is gained. The process is the same as in the acquirement of optical memorial images; by coincidence or sequence of the excitement of adjacent retinal points arises the firm association

between the corresponding perceiving cells on the one hand, by the movements of adjustment of the eye between the latter and the points of the motor projection field on the other. By the constant recurrence of like relations under the same conditions, the associations gain the requisite stability, even increased to insolubility. Evidently the consciousness must first be oriented as to the retina ere projected images can be spatially estimated.

As this consideration leads to the the spatial sense of the retina, in that the retina is considered as being a part of the surface of the body, while the optical apparatus of the eye combined with it only furnishes the equipment, so the like consideration applies to the tactile organ of the skin. In the skin a spatial sense can also be developed, in that the consciousness is informed as to the sequence and position of the sentient points of the skin. And this information can only be gained by the exercise of associations between perceiving elements or perception cells, which correspond to the points of the skin, and mechanisms of movement in the motor projection fields of the trunk, eyes and limbs. But we will have to regard the latter as much more complicated than the combinations of movements of the eye muscles. Think how relatively simple are the movements of the eye-ball, contained in a given space, freely movable about a centre of rotation, in comparison to those of the more versatile tactile organ of the hand. If we only consider the simplest tactile movements, like flexion and extension of the fingers, we know from Duchenne, that they cannot occur without counter movements of the wrist joint, which evidently serve for its fixation against the forearm. The forearm must be fixed against the arm, and this against the shoulder, but the latter fixation presumes a corresponding innervation of the trunk muscles, without which the trunk would lose its equilibrium in using the hand. It is then a matter of acquiring definitely fixed relations between a large number of separate mechanisms of movement ere the hand can be used as a sense organ. This task seems so difficult that we might doubt the possibility of its accomplishment, if its appearance did not convince us to the contrary.

Gentlemen, I cannot help seeing that in my statement the thought has occurred to you, it would be a more or less voluntary construction and will not stand the test of facts. Permit me to briefly mention the data which, as I believe, necessitate the assertion submitted with convincing force. One fact is that in cortical diseases, be they of the occipital lobes, be they of the parietal lobes, continual defects are observed and in the first cases of the visual field, in the second of the cutaneous sensibility of the limbs. The occurrence of such defects incontestably prove, in my opinion, that adjacent points in the retina must possess a projection in adjacent cortical elements of the occipital lobe, adjacent parts in the skin of the limbs those in adjacent cortical elements of the parietal lobes. The occurrence of circumscribed and hence continuous defects of this sort would otherwise be absolutely inexplicable. It is the next and most probable assumption that this projection refers to the nearest termination of projection fibres, the projection cells serving for perception.

The second fact consists in the more certain orientation we possess in regard to the retina and the whole cutaneous surface. For the retina I need not now go into this. But the skin of the body is known to us at every point of the body with certainty, corresponding to the delicacy of the spatial sense. So it is that any person with closed eyes can immediately indicate the spot on the skin that has been touched. He cannot only name or indicate it with the finger, but he can also correctly turn his eyes to this spot. At the places with specially delicate spatial sense, e. g. the palm of the hand, he can reconstruct from the sequence of cutaneous points touched the form of a letter, a number, even arabesques, which have been outlined. Similar experiments succeed in the majority of persons at a number of other places on the skin.

Gentlemen! If you have followed me thus far, you have acquired the most essential material for the construction of a consciousness of the body, but it is still imperfect and needs completion. The representation of three of the most important sense surfaces is still wanting, those which

serve for hearing, taste and smell. There is no difficulty in transferring the points of view gained to these senses. You will at least admit this of hearing, because here the sensory content of the sensation—think of the speech sounds—acquires an importance controlling the whole mental life. But yet we have seen in an example above, that under certain circumstances the organic sensation shows itself very forcibly in this sense and produces the complicated defense movement of recoil. Not only the intensity, but also the quality of the sense impression can cause similar effects; there are certain sounds which produce the feeling and movement of horror, and that tones are pleasant or unpleasant is a daily experience. Besides it is well known that a certain spatial sense is peculiar to the organ of hearing, in that the place is determined from whence the sensation of sound has come. It is shown to be more finely developed in pathological cases, but still presents certain local signs which give the locality of the stimulus, are also present in the acoustic sense surfaces, excepting the arrangement of Corti's organ, which serves for the orientation of tonal quality. In taste and smell organic sensation and sensory content of the sensation are so closely united that they are only artificially separable. As you know they are both exquisite chemico-analytic senses, whose importance for the nutrition and protection of the organism is apparent.

To the organic sensations belong the sensations coming from the muscles, joints and large viscera. These latter show very eclat that the organic sensations have an independent significance and may occur without modal sensation. These organic sensations are only slightly conscious in health, although feelings of hunger and satiation, desire to urinate and defecate, sexual desires, etc., are known to everyone. Whereas diseases of the viscera prove that they are endowed with active sensibility and essentially contribute to our feeling of well-being or discomfort. In fact it is this element which has always been differentiated as the "affective tone" of the sensations, *i. e.*, their attribute of being accompanied by agreeable or disagreeable feelings, in

the organic sensations from the viscera predominating over all the others, even those which refer to the location of the sensations.

The location of these visceral feelings is always vague, if definitely pronounced; think of the pains in the stomach, hepatic and renal colic, the discomfort of a distended bladder, etc. But the normal functioning or the disordered functioning of these organs hence contribute largely to the general sensation, or in other words, the consciousness of the body is plainly dependent on the state of the large viscera. We will have to define in general the affective tone of the sensations as an affection of the consciousness of the body. It is therefore to be presumed that the consciousness of the body contains special projection fields for the large viscera, a presumption, which is essentially supported by certain hypochondriacal symptoms, which occur in the insane. In regard to the location of these projection fields we are wholly uninformed, if Meynert's hypothesis is rejected, which places them in the ganglia of the corpora striata. As seductive as this may seem from general considerations of an anatomical and morphological sort, it is at present wholly undecided and permits no practical applications.

The sum of the memorial images of all organic sensations forms the content of the consciousness of the body, just as the memorial images of the modal sensations constitute the consciousness of the world. We may now undertake a psychological definition according to the points of view gained and state, that the first refer to the location of the stimulus, the latter to the form of the stimulus or the mutual arrangement of the stimulated elements.

It is now possible to briefly state what constitutes the essential difference between a sense perception itself and its memorial image. The sense perception is always accompanied by organic sensations and therefore definitely projected into space, whereas the memorial image is not. Probably it is the retinal points, skin points and directly associated "perception cells," which produce the organic sensations.

That all projection fields, which comprise the conscious-

ness of the body, must be regarded as the most intimately united with each other by association paths, I have already intimated. As the reports, which the body sends to the consciousness, are always identical under like conditions, so among the memorial images the organic sensations are more firmly united than can ever be thought of the memorial images of the world. The different parts of the body in their relations to each other are absolutely unchangeable, whereas the things of the world are proportionately changeable. We can more or less exclude the things of the world, whereas the sensations, which our body furnishes, accompany us continually. During sleep the effects of the world as good as leave no trace in us, whereas the surface of the body, on which we lie, continues to send its signals to the consciousness. Whatever position we may take while awake, we are unable to get rid of the constant effect of pressure and its perception on some part of the cutaneous surface.

That a certain consciousness of the body constantly accompanies a person when awake, is incontestibly shown by his conduct. May the attention be ever so much taken with an object of the world, may one be ever so deeply absorbed in a view, in listening to a melody, the body still maintains its erect posture, continues to walk, avoids obstacles, adapts itself to the irregularities in the pavement, makes movements of defense of different kinds, etc.

It is now comprehensible to us, that from each organic sensation the whole complex of memorial images of the bodily organs is called into consciousness, so that, if we hold to the analogy with the concepts of the consciousness of the world, here only a single large concept so to speak, that of the body, is constituted. At least those movements of defense, which we became acquainted with in intense organic sensation, indicate that almost all the muscles of the body can participate in it. For the formation of concepts of definite regions of the body, with as clear a boundary as in concepts of the world, do not seem to occur or imperfectly in the consciousness of the body. As a sense perception is impossible without the related organic sensa-

tion, so the consciousness of the body is awakened *in toto* by each sense perception. Hence the consciousness of the body rises with every sense perception.

Organic sensations have a double origin; besides the stimuli of the world there are internal stimuli, which produce them. Consider the skin's feeling of warmth or cold in consequence of vasomotor processes, perverse sensations of taste in catarrh of the mucous membrane of the mouth, subjective noises in the so-called ringing in the ears, the flashes of light, which arise from the retina in absolute darkness, etc. All these organic sensations are not referred to the world. The opposite relation, which here exists, is then that sense perceptions are not thinkable without corresponding organic sensations, but that the latter may occur without the stimulus being referred to the world. *The perception is preceded by organic sensation*, the organic sensation not by the sense perception. So this idea is suggested from the state of the central projection fields, which I have already intimated, namely that the consciousness of the body is represented by the perception cells and indicates the first station in the cortex, which must be passed ere the sense stimulus reaches the consciousness of the world. The layer-like superposition of the ganglion cells of the cortex favors such an assumption, in which those of the medullary borders of the next layer (respectively adjacent layers) would represent the consciousness of the body.

There are certain times when the body of the adult undergoes marked changes, like that of maturity or puberty, the climacteric, pregnancy, the puerperal state and senile involution. According to our theory it cannot now seem strange that they afford a specially favorable foundation for the development of certain diseases of the consciousness.

The relative stability of the consciousness of the body is explained, in that it seems as a sort of constant magnitude in contrast to the other contents of consciousness, as a unity in comparison to the impressions of the world subject to change. Besides the consciousness is taught by experience, that the body is inseparable, whereas the world is to be more or less divided into its components. So a

"primary I" (Meynert) is formed, by which must be understood the consciousness of the body.

VI.

CONCEPT OF SPONTANEOUS MOVEMENT. DIFFERENTIATION FROM THE REFLEX. SENSATION AND IDEA OF POSITION, FEELINGS OF INNERVATION AND THEIR MEMORIAL IMAGES, SENSATION AND IDEA OF MOVEMENT ARISE FROM ORGANIC SENSATIONS. THE TACTILE SENSATIONS AND IDEAS OF THE TACTILE ORGAN OF THE HAND ARE DERIVED FROM ORGANIC SENSATIONS.

Perhaps it has surprised you, that I have completely ignored a group of phenomena, which is most intimately related to the consciousness of the body, namely: all the phenomena of the motor apparatus. I have avoided this inquiry until now, because it is especially complicated. How is it conceivable that the mollusk, we have mentioned, learns to control the movements of its muscular apparatus so perfectly, as is actually the case, if we will set aside congenital aptitude? We will now investigate this point more fully.

It is well known that man, like every vertebrate, presents the plainest evidences of his phylogenetic descent from invertebrates, in that the spinal cord has retained the organization according to the number of vertebrae. We must admit this metamerie organization in each apparatus of movement, with which the brain is equipped. It thus indicates that primarily the reflex mechanism of the spinal cord is mutually related to the sensory and motor apparatus of like segments. So it is, that a slight prick to the palmer surface of the toes produces, as a reflex, their dorsal flexion. By the irradiation of the reflex demonstrated by Pflüger it is certainly shown, that this metamerism does not exclusively fix the structure of the spinal cord, but that combinations of larger muscle areas, indeed according to the intensity of the stimulus almost all the muscles, must be prefigured in the gray matter of the spinal cord. All these reflexes have nothing to do with consciousness,

in fact are congenital and occur later, when consciousness is precluded, as in profound sleep and unconsciousness. Still when awake consciousness subsequently takes note of them. The mollusk gets reports of the reflex movements depending on a congenital attribute of the body. We may call these reports sensations of movement, without fore-stalling the qualifications, and their residual memorial images, ideas of movement or motor memorial images. We now see what we have to understand more strictly by sensations of movement.

In a reflex movement a series of the most diverse sensations must arise. Chiefly those of the joint, which we may indicate by *g*. This joint sensation, due to a definite excursion of movement, is combined with very definite cutaneous sensations *h*, for on the flexor surface of the joint the skin is shortened and approximated, while on the extensor stretched and separated. Therefore *g* has a very constant relation to *h* which occurs when the same position is passively imparted to the joint. But the muscles are also implicated, for in flexion they are contracted on the flexor side of the joint, lengthened and stretched on the extensor, while the opposite occurs in extension. It may be proven by pathological observations that these muscle sensations, *m*, have an independent meaning, for they are occasionally retained when the cutaneous and joint sensations are absent. The very definite relations of these three sensations to each other: *g:h:m*, we term the sense of position *I*, so that *I=g:h:m*.

We will call its memorial images ideas of position *L*. The same ideas of position must arise, when the joint is moved passively, so they by no means belong exclusively to the reflex act.

A person's ideas of position may be studied by passively putting his joints in various positions. The normal person is either able to imitate these positions or to precisely state each change, at least he shows he has a perfectly correct idea of the position of his limbs. This experiment is especially important in the freely movable joints of the fingers and toes. A prerequisite for success is

the complete elimination of the individual's own activity, or the elimination of his volitional impulse, which is not equally attainable in all individuals, for it presumes a certain control over the movements.

Formerly the muscle sensations were wrongfully regarded as the chief factor in the sense of position and therefore the possession of ideas of position were considered a special sense, the "muscle sense." We will avoid using this term, for it may lead to further misconceptions.

But if we now assume, the sense of position *I* is produced by a reflex movement, the sensation of movement *b* arises; to those already mentioned a further characteristic must now be added, which can be nothing else than a sensation of cell action ζ , and is to be regarded as the cause of the muscle innervation at the moment of the reflex. By the muscle contractions, which then occur, certain muscle sensations *mI* are produced, and have a definitely constant relation to the process in the ganglion cells ζ , then $mI:\zeta$. If we term the report, which comes to the consciousness from the motor impulse, the sense of innervation *i*, so $i=\zeta:mI$. On the whole the sensation of movement *b* contains both components of the reflex movement, the sense of innervation as well as the sense of position, and these have, as is readily conceivable, a definitely fixed relation, then $b=i:1$.

The muscle sensation *mI* is capable of direct demonstration by faradization of the muscle. Yet at most it will then be possible to determine what current strength is perceived and whether changes in it are recognized. The resulting movement of the joint causes an independent sense of position, which is perceived like any other arising in the consciousness normally. A regular connection between the muscle sense and the sense of position does not exist in this experiment, because an isolated contraction of a muscle never occurs normally, so the conditions of the experiment offer a novelty to the consciousness.

The sensations of movement, which reach the consciousness in this way and must evolve the ideas of movement *B*, by the contents constantly recurring in the same manner

in fixed components of the consciousness, give only memorial images of reflex movements, but still very definitely appropriate muscle arrangements are there represented, for reflex movements are without doubt co-ordinated as Duchenne thinks. According to Duchenne's classification into impulsive, collateral and antagonistic muscle co-ordinations, the reflex movements come under the impulsive and collateral. The reflex movements are not without a certain adaptation, yet they are apparently to be regarded more as protective measures, which are to serve as a defense against irritation or to remove the part of the body from its range. These two factors are to be regarded as the most essential preliminary conditions for the accomplishment of spontaneous movements. Bear in mind, that during the reflex movement the consciousness is not only aware of the movements as such, but also of the sensation *e*, which is the stimulus exciting the reflex. Its memorial image *E*, be it tactile, be it directly painful irritation, will consequently be associated with the idea of movement *B*. We can then only speak of spontaneous movements, when the memorial image *E* produces in the association path *EB* the idea of movement *B*, that the movement actually happens. Likewise as a preliminary condition the assumption is essential, that a centrifugal path *p* extends from *B* to those ganglion cells which have previously participated in the reflex process. This path is in fact proven to be the pyramidal tract. Two examples will better illustrate the essential difference between reflex and spontaneous movements. A pin prick to the sole of the foot results, as a reflex movement, in a flexion of the lower extremity in all its three joints, and thus the foot is removed from the irritation. In the spontaneous movement the pin is merely seen, the memorial image *E* of the tactile sensation *e* becomes conscious and through the association path *EB* effects the movement, which had previously been reflex. The necessary path *Bz* is the pyramidal tract. The closure of the eye on the approach of a foreign body is very similar in its nature; then an optical perception occurs first, which is associated with the memorial image *E*, as the latter with the idea of movement *B*. In a general way we

may define spontaneous movements to be reactions to memorial images of external stimuli. The majority of spontaneous movements during life might really start from some external stimuli, if the possibility cannot be controverted, that present external stimuli may be wholly wanting, so that spontaneous memorial images form the starting-point of the association process, which finally ends in the movement.

The child's first spontaneous movements are apparently controlled by organic sensations. The movement of sucking, which is reflex in the new-born, subsequently becomes a spontaneous movement due to the organic feeling of hunger. Later the sight of the nipple suffices to produce the movement of sucking. The sensitiveness of the child's eye to bright light refers to the predominant organic feeling as the cause of closing the lids. Of the spontaneous movements those of *defense* are by far the most prevalent in the early months, *i.e.*, those depending on organic sensations and are a more or less faithful imitation of the reflex movement. Also very complicated combinations of movement clinging to the adult through life, like those of shrinking, recoil, springing aside, etc., are under the control of organic sensations, as shown by previous examples, and if heredity is admitted to have a certain influence in the development of language, which can hardly be denied, then the impulse to imitate sounds heard have to be referred to organic sensations in the acoustic. In other words, it will have to be assumed that the excitations of the acoustic at a certain period of life are attended with a pleasant feeling, and that the child's experience in being able to utter these sounds is utilized to produce these pleasant sensations by its own speech movements. Organic feelings in the optical domain are demonstrated in the adult, when the pleasant sensation, similar to sensual gratification, is considered in the play of colors, where those of different saturation follow each other in rapid succession. That in the province of the acoustic the pleasure afforded us by a piece of music originally depends on the same condition, can scarcely be doubted.

The simplest scheme of a spontaneous movement, which

was given above, may be presently applied to the actively acquired tactile ideas. As in the reflex the movement follows the stimulus, as in the movement of defense the optical perception of the approaching object causes the lids to close through the association path, so doubtless the optical perception of an object is often the starting-point for the execution of tactile movements—*movements of offense* according to Meynert. If the whole surface of our skin functionates as a passive tactile organ, *i.e.*, imparts certain vague tactile perceptions, which occur without any movement of the body, we are still in possession of specific movable tactile organs, real antenna, so to speak: the extremities and in early life the mouth. The child feels of every object it sees with its hands and mouth. The previous statement as the retina, that the memorial image is the residence of a definite spatial arrangement of the excited retinal elements, must naturally apply to the passive tactile organ. In the retina there is to be sure a place of keenest vision, which we then claimed to be the place serving exclusively for the acquirement of memorial images. In the passive tactile organ of the skin there are also areas of keenest sensation, to which belong the mouth of the suckling, as well as the skin of the hands and fingers; but still the assumption might be advanced, that no single limited cutaneous area alone gives origin to memorial images, but that they may be acquired from every part of the skin. Within certain limits this is also true of the retina of course, for objects perceived eccentrically are correctly recognized under certain conditions, and for the retina it may be postulated, that the memorial images thus acquired are gradually associated with those of central vision. A similar association between the memorial images of the different cutaneous surfaces will have to be presumed in the central projection surfaces of the passive tactile organ, whenever they are derived from the same object. But still it cannot be denied that finer tactile ideas are largely acquired by the movable tactile organs: the hands and fingers. The way this occurs will now be more closely investigated.

Should a concrete thing, *e. g.*, a penknife, be felt of,

and we assume this is done with one hand only; the volar surfaces of the fingers are passed over it, being frequently removed, and so convince ourselves of its consistency, smoothness or roughness, temperature of the surfaces and the general form and size of the object. We must regard the sum of these sensations to be a unit, which only recurs when a penknife is again felt of, but from no other concrete object. If we call this unit the tactile sensation of an object t , it is composed of a series of cutaneous sensations $e_1+e_2+e_3\dots$ and a series of sensations of motion $b_1+b_2+b_3\dots$, which have a simple and complicated relation with the first. Simple, in that any greater muscular contraction intensifies the sensation of pressure, which is produced by the object, complicated in that a series of successive movements is required to ascertain the form of the object under conditions of equal pressure. How complicated the quantity $t=e+b$ must appear to us, arises from the fact that each member of the series b_1+b_2 is already a compound quantity, as I have just shown. If we bear in mind that $b=i:l$, i.e., indicates a definite relation of sense of position and feeling of innervation, so now the association with the passive tactile sensations of the series $e_1+e_2\dots$ is added. This complicated quantity we may term the tactile sensation t of an object. We name its memorial image T tactile idea or tactile image. In fact we test the presence of tactile ideas by undertaking to recognize concrete objects by merely touching them with the hand, the eyes being closed. The normal person is able to do this readily with any object familiar to him.

By going further into our subject it ought to be clear to you what an important role the movements of the body play in sense perceptions. The memorial images of the tactile sense, which in the beginning of our researches we traced to a sort of passive projection process, like the other sense perceptions, now seem composed of memorial images of spontaneous movements. But as these motor memorial images will have to be added to the consciousness of the body, we then enter a province, where consciousness of the world and the body lose their principal

contrast and the proposition that changes of the body alone inform us of the things of the world, is again most evidently verified. All the spontaneous movements, which serve to master the world (offensive movement, Meynert), show the same connection between the world and body. Every accomplishment or art within the scope of movement must be tediously learned, from those of walking and speaking to the most complicated of the creative artist. All these movements take place under constant direction of the tactile feeling, they are first possible by the fixed possession of a large series of the most complicated tactile ideas. When we undertake to test the ideas of movement, we generally content ourselves with the simplest evidence of manual dexterity. The patient, with eyes closed, is asked *e. g.*, to unbutton and button his coat, to sharpen a lead pencil, to take out his watch, to outline figures in the air, or to write in the usual way. With few exceptions the manipulation of one or more objects is always requisite, therefore the possession of tactile ideas is indispensable for the performance of the required movements.

As in the tactile ideas just discussed the movements are united with cutaneous sensations, so there is a specially complicated muscular apparatus, whose movements are under the direction of retinal impressions. When the form of an object is to be accurately perceived, by suitable movements of the eyes, the place of keenest vision, so to speak, is passed over the outlines of the object, a process which is perfectly analogous to feeling it by the movable tactile organ of the finger, and could well be called feeling the contours by the *macula lutea*. The complicated eye movements, which are requisite, leave motor memorial images and form very similar series of associations as to those acquired in feeling with the hand. As these blended with the passively acquired memorial images from cutaneous sensations *E* represent the complete tactile idea of an object, so the motor memorial images of these eye movements are a new component, which, associated with those already known constitute that which may with propriety be termed the visual idea. Unfortunately it is impossible

to separately investigate the sensations and ideas of position of the eye movements. Nevertheless their importance with respect to orientation in space cannot readily be overestimated, for they are another eclat example of how organic sensations are utilized to gain in consciousness a fixed image of the world. In conclusion I must call your attention to a very similar relation between speech movements and perceptions of hearing; the child's speech movements are chiefly feeling movements but which are not related to the cutaneous or retinal sensations, but to those of hearing, *i. e.* are directed by them.

In so far as we may survey the content of consciousness, it shows itself accessible of a certain localization by the fact of projection. As the optical memorial images are localized in the central projection field of the optic nerve, the acoustic in the central projection field of the acoustic, we cannot doubt that tactile ideas from concrete objects are similarly localized. Simple figures, like numbers, a cross, a circle, a triangle, placed on the skin, are recognized by feeling, when the eyes are closed. The central projection of the passive cutaneous tactile organ then develops a spatial sense, like the retina, in which the mutual arrangement of the cutaneous surfaces affected by the stimulus is decisive for the memorial images thus arising.

As above stated, these cutaneous memorial images become tactile ideas by their association with the ideas of movement of the tactile organs.

Hence the same tactile images reach different projection fields, and are not only united with each other by fixed association, but particularly with corresponding visual ideas. The tactile ideas of concrete things should be exclusively localized in the arm regions, and of course for the right and left arm in different hemispheres, because these tactile ideas in the adult at least are wholly acquired from movements of the hand.

It is comprehensible, that we are not congenitally orientated as to the position of retinal points, but must acquire it. Orientation as to up and down, right and left, relates exclusively to the body and simply indicates the

acquirement of fixed associations between the perception cells, which are co-ordinated to the points of the retina, and the "concept" (see above) of the body. Therefore sensations of movement of two kinds are to be considered; just those derived from movement of vision upward, downward, right and left. They may be called general eye movements. Second, those serving to focus the eye ball to the light stimulus or to close it, may be distinguished as movements of adjustment. That eye movements are reflex at some period of the individual's life is an absolute physiological postulate. Most probably there are movements of adjustments of adjustment, which may be produced by means of suitably formed combinations of the primary optical centres with the nuclei of the eye muscles by the light stimulus. The feelings of the innervation ($i=\zeta:mI$, see above) originating in this way, presume a specially fine sensibility of the eye muscles, in case special sensations of position of the eye ball (ciliary nerves?) will not be admitted. Their memorial images are the ideas of movement in the province of the eye muscles and are associated in accordance with their mode of acquirement with the perceiving elements in the projection field of the retina, that from some of these a definite form and a definite degree (range of excursion) of associated muscular combinations can be produced.

The points of stimulation found by Munk in the dog's occipital lobes, by which movements of adjustment could be effected, apparently correspond to these. In the dog they locally coincide with the cortical projection of the retina, and the centrifugal fibres $B\zeta$ (see above) arising from them, run in common with the projection fibres in the sagittal medullary fasciculus of the occipital lobe. In so far they take an exceptional position and are distinguished from the fibres of the pyramidal tract.

VII.

CONSCIOUSNESS OF PERSONALITY OR INDIVIDUALITY. IS ITS LOCALIZATION POSSIBLE? THE EN- IGMA OF SELF-CONSCIOUSNESS.

The cursory glance I have given you of the two great

provinces of consciousness of the world and body, far from exhausts the content of consciousness, for they are but the first foundations of a consciousness, we have in common with animals, if quantitatively different. Man's higher mental development must surely start from these foundations, but far surpasses them, and begins, so to speak, at the time these foundations are required. The results of the normal mental development is the formation of a personality or individuality. The unconscious person, whom we have chosen as an example, must regain consciousness of his personality, ere we can regard him as entirely himself, *i.e.*, he must remember, not only that he has the same body as before the accident, but that his mental possessions are the same. *The consciousness of the personality*, which we must now investigate somewhat minutely, presumes the possibility of an ego development. Its chief condition is, as we have seen, the unchangeable body in contrast to the changeable world. The force of this fact is evident the moment the child begins to use the word *I*. If the mental development is arrested before this period, an idiot occurs, who speaks of himself in the third person. The consciousness of the personality embraces all that is generally understood by mental possession and mental attainment, all the child must be taught by education, development and training, therefore the individual may be formed by it.

Primarily decisive for a person's future is doubtless the social medium, in which he grows up. A living example is always the most effectual means of education, and must be the more so, when combined with self-evident authority, which is innate in the parents toward the child. The parents' family life undoubtedly imprints the decisive stamp on the child, as to its mental personality, its future character. The consciousness of the personality therefore embraces all those attributes, which follow with instinctive legitimacy from the social medium, in which the individual has grown up and lives. They are especially the so-called attributes of character, which are very definitely developed by the force of this medium, consequently a brutal or refined affective condition accordingly as an egotistic or altruistic

bias for future actions predominates. These attributes may be developed to a marked degree, if the most powerful and likewise half instinctive means of the person's education, phonetic speech, does not cooperate, as the example of the deaf mute teaches.

The possession of language must be associated to the consciousness of the personality in a certain sense, in so far as it reflects the peculiarities of the medium, in which the person has lived. The variation of language in different peoples assigns a special position to this part of the mental possessions, different from that which the universally approximative like consciousness of the world and the body occupies. Within one and the same race there are variations in dialect, which often cling to a person his whole life and betray the medium in which he has lived. The person's manner of speech, which differs so much according to his education and degree of mental development, belongs to the consciousness of the personality as a partial phenomenon. By language the whole mental status of the adult, and not only of that, but of countless generations, whose mental inheritance we have received in language, is transmitted in definitely logical arrangement and organization to the child's brain, somewhat comparable to the action of an uncompleted instrument. Systematic, logical thought, all finer mental operations doubtless have their main root in the perfectly transmitted art of language. Therefore the kind of language which has come to the individual from his parents, is decisive as to his whole mode of thinking, whether crude and inadequate, as from persons of low rank, or from refined and highly educated parents. The altered mode of speaking in the insane indicates a change in the mental personality. If we leave out of consideration the educational medium of language, so all that the person learns by instruction and tradition, the sum of knowledge, which he appropriates, becomes a component of his personality. When we speak of a person's memory, we usually understand the sum of his acquired knowledge, at least we generally test the memory by asking about this information, and judge of the ability to remember according to the

average established by the majority of normal individuals. The sum of this information or knowledge is not only quantitatively, but also qualitatively manifested differently, according to the individual's course of development. I need not go further with you into the quantitative difference. It is therefore qualitatively so great, because the knowledge of the lower grades of education consists in most part of serial associations, which dispense with inner connection; historical dates, sayings and songs learned by heart, the Ten Commandments, even the multiplication table are remembered. So long as new facts are acquired, a sort of summation of this possession occurs in knowledge, but which is not wholly equally equivalent, in so far as the child's brain is characterized by the ability to retain what is learned, the early acquired knowledge is often refreshed and so must become fixed in the memory by its use. Reading and writing usually belong to the information acquired at this time, which are well fixed, but still based on acquired association of forms of letters with phonetic speech, an association, which is often strangely broken through by focal brain diseases.

To the consciousness of the personality also belongs the sum of experiences peculiar to the individual. The individual, whom we have before us, always represents their sum total, be it information, be it experience, a sum, which has a positive value only at a certain instant of time, but which gains new accretions every hour, every day. The present state of the brain in a certain measure is the derivative of all prior states. Consequently the requirement, which must be made of an individual after a mental disease, that he recognize the morbidness of his prior state; for the sum must necessarily be false, if false components are contained in it.

The range of a person's interests, be they merely egotistic, or in others, family, etc., or fixed on the occupation, the daily work, also belong to the consciousness of the personality. The interest in family, friends, chiefly to the depreciation of self, often takes a dominating position in the individual's content of consciousness, think of the intimate

relations between mother and child, between man and woman in sexual love, etc. The readiness to die for others, as well as on the one hand to die for an idea, a principle, a set purpose, on the other the predominant general egotism of the majority, shows the extreme opposites and the infinitely large variety of mental personalities, all of which are within the normal. Further variations are induced by disease. All this explains the difficulty of establishing a psychical status, be it in the normal person, be it in one mentally diseased, it therefore also explains the slow advancement of clinical psychiatry.

The consciousness of the personality has a certain, readily evident dependence on the consciousness of the body and the world. The person with keen senses and robust health must develop differently in his mental personality, than one with blunt senses and feeble body. The character attributes of courage or cowardice, frankness or secrecy, to act vigorously or timidly, may often be traced to such foundations in the consciousness of the body and the world. The possibility of adaptation to surroundings, which Herbert Spencer calls the sign of the normal mental state, varies according to these preliminary conditions. The mutual relation may be expressed in the proposition: The consciousness of the personality is a function of the consciousness of the world and the body. But if the impressions derived from the social medium are included in the consciousness of the world, which is proper, this proposition is very obvious. It is then evident that under good conditions such personalities will develop, whereas in criminal families anti-social personalities occur, and a morbid mental state alone does not suffice to explain the criminal nature, but rather such can only be spoken of, when the mental personality has developed contrary to the surrounding medium, as in cases of so-called moral insanity. At any rate the consciousness of the personality in comparison to the consciousness of the world and the body is by far the most complicated, because depending on such association

processes, to which previously a certain individual variation was inherent.

The position the individual believes he occupies in human society according to his own estimation, depends on the consciousness of the personality. If it is morbid, we find the striking symptoms of grandiose delirium, micromania, delusions of persecution, personal importance, hypochondria, etc. We will later go into these morbid phenomena more fully.

What spatial idea can we gain of the consciousness of the personality? Or have we reached the limits of spatial conception and now face the incomprehensible?

Evidently the consciousness of the body is usually capable of localization, because it is most closely united to the standard of the projection system. The consciousness of the world at least permits division according to the projection fields in which its components, the sensory memorial images, must be regarded as stored. In the consciousness of the personality a localization according to the standard of the projection system is now out of the question. Therefore is it entirely beyond the range of the principle of localization?

That this is not the case, clinical experience teaches, for certain mental diseases exclusively affect the consciousness of the personality, others almost entirely the consciousness of the world or body, finally again certain other diseases of the personality are combined with those of the body or the world. The disease process therefore seems distributed to different localities. The progressive and pernicious mental disease, progressive paresis, successively affects the consciousness of the personality, the world and the body and seems to begin quite regularly in an atrophy of the fibres of the outermost gray cortical layers. Further clinical experiences exist and indicate an extensive localization within the consciousness of the personality. In consequence of severe diseases, also of brain diseases, very large portions of the consciousness of the personality are extinguished. Fancy, that all those ideas acquired very recently —during a period, which may embrace a few months or

years, as well as half a life time, are lost. Cases of this kind have been reported, e.g., from my clinic by Dr. Freud, under the caption of general weakness of memory.* These persons have quite an accurate memory—sometimes as accurate as could be expected of them normally—of all events prior to a definite period, e.g., the 30th year, while all those subsequent have disappeared from their memory, often their most important experiences, such as marriage, birth of children, loss of property, etc.; also well-known public events, accomplishments acquired during the time, etc. The loss embraces, in a word, all those links in a chain of ideas, which have been added to the consciousness of the personality from a certain period. Consequently such a person, if an old woman, still considers herself a young girl and so acts in comical contrast to the reality. To a less degree the same memory defect is almost physiological in very old people, when early memories may be faithfully retained, while the daily occurrences of the past few days, weeks, months are often entirely lost. The fact, that the ideas of a definite period are lost and in consequence of gross material disease, admits of the immediate interpretation, that the location in the cortex of these complicated remembrances is determined by the time of their acquirement, from which, as the crudest, but immediate sequence, it would follow, that a sort of layer-like deposit of ideas occurs in the brain, similarly to the formation of the earth's strata. One might be inclined to ascribe the consciousness of the personality, as the latest formation, to the outermost cortical layer composed of projection fibres. Without being frightened by the materiality of this view, there are other data, which stand in the way of using the facts previously mentioned for the assumption of a layer-like localization. For instance, a circumscribed loss of recently acquired memorial images is repeatedly observed in focal diseases of the brain. Cases are known and sufficiently authenticated, where after apoplexy, persons, who had command of several languages, lost this accomplishment, except their mother tongue. Charcot has recently reported such a case. Un-

* Arch. f. Psych. 20 Bd. S. 441.

fortunately the difference between the ability to speak and to understand a language has not been sufficiently studied, so that the location of the loss of function in the strictest sense is impossible. Still the facts reported show with certainty that this loss is perfectly analogous to the other focal brain symptoms. If we now assume that it is a matter of a purely motor defect, which, according to all our previous knowledge, would have to be located in Broca's convolution, so in consequence of our above assumption, apoplexy completely destroys very definite layers of this convolution, situated close above or below, while the mother tongue would be left wholly unprovided for. This assumption seems extremely improbable. Whereas the following idea has in its favor a large number of other well known facts. The cells and fibres of the cortex are extremely delicate structures, which in a certain measure remain in an embryological state so long as they do not functionate. Through function they attain a certain resistance and this increases proportionately to the exercise of the function. This hypothesis is exactly analogous to Cohnheim's for the muscles, in that they can only grow and increase during their function. We now assume, that in the vicinity of a nodal point in the brain, there is a centre, like Broca's convolution, where besides cells and fibres, which have long functionated and therefore possess a certain resistance, there are those whose nutrition is impaired by slight injuries. Thus it seems perfectly plausible, that the collateral effect of an acute focal disease extends to the adjacent areas to destroy the one element, while it leaves the others intact. This hypothesis serves to similarly explain cases of general weakness of memory. As here in a circumscribed place, so there an injury implicating the whole brain mantle must be assumed, which only the resistant elements could withstand, and so it is not strange if the degree of this resistance is a function of time, in other words, only those memorial images disappear, which are of a relatively short duration.

The consciousness of the personality includes one of the highest functions of the brain, which has always

been the enigma of all enigmas, the phenomenon of self-consciousness. In this phenomenon it looks as if the same organ, the brain, which is believed to be able to perceive, would at the same time be the thing perceived. But it is impossible for one and the same thing or being, which perceives, to also be the object of perception. This inconsistency shows what vagueness prevails among philosophers as to the nature of the matter in question, who still think they should here admonish against overestimating the import of certain anatomically physiological opinions. Reflect, that the consciousness of the personality may be regarded as a sum, whose value is a function of time, then that the perceiving individual at the moment of the perception is a definite mental personality, which differs from that of the moment before by an appreciable value, so it cannot be surprising, that this last value is able to perceive besides the matter of the sensory perception the value of that sum preceding it in point of time. In other words, the mental personality does not perceive itself, but the personality of a few moments, hours, days or years before, and it is a delusion to believe it has remained exactly the same.

THE VARYING TYPE OF GENERAL PARESIS AND ATAXIA.

By C. H. HUGHES, M. D., St. Louis.

AFTER a study of general paralysis of the insane for thirty years Mendel (*Neurologische Centralblatt*, Nov. 15th, 1898) believes the type of this disease presenting in the newer and larger clinical picture of paresis contrasted with the distinguishing features as described by the early writers is markedly changing and in this conviction of the distinguished neurologist of Berlin my own clinical experience concurs as I have been enabled also to verify the myositis of Gower's as an independent condition and as a concomitant polyneuritis. Mendel thinks also that this is true of numerous other diseases among them especially diphtheria. The present type of diphtheria as we have probably all observed is a departure from that of Bretonnieu so classically differentiated from ordinary membranous croup and called diphtherite in the early part of the present century. The earlier descriptions of general paralysis of the insane made by Bayle, 1822, 1825, 1826 and Calmiel 1826 preceded by the nebulous recognitions of the disease by Willis in 1672 and Haslam in 1798 to 1809, were accounts of chronic cases as observed by alienists in hospitals for the insane.

Mendel notes the following changes: first, a marked increase in the proportion of dementia cases; second, remissions are more often to be seen than were formerly observed, patients recovering temporarily to the extent of

resuming business; third, apparent arrest of symptoms. "Nowadays" he says, "we make our diagnosis by the pupillary immobility, altered knee signs, analgesia of legs, changes of disposition, speech and writing. We confidently expect a disease to go rapidly to its termination, when, behold! in not a few cases the symptoms become stationary and the word progressive which is presumed to be characteristic of the disease appears to be misplaced."

He notes the appearance of the disease in the female sex, in the proportion of about four males to one female, and notes the fact that forty years ago writers declared that this disease was peculiar to males. He notes also the appearance of the disease in the young of late years, and reminds us that not long ago it was regarded as a disease of mature years. Now he sees the youth of both sexes are affected to an equal degree, and regards some of these cases probably due to hereditary syphilis. Mendel thinks also that the type of syphilis is changed and believes with many other neurologists that this disease is a causative factor in the majority of cases. "It is behind at least three-fourths of all cases" he says. He ignores neuropathic degeneracy as an essential causative factor and we think quite justly, but blames modern civilization with its high pressure struggle, its ambitions, honors, chagrins and the new woman and her new ambitions as causative influences in the development of progressive general paresis or paralysis of the insane.

This change in the features of general paresis is undoubtedly. William Julius Mickle foreshadowed it in his discussion of the varieties of this disease in his great clinical contribution to this subject over a decade ago.* How are we to account for it? It also has some other features, notably the recognition of the fact by the patient that something is wrong with him requiring medical remedy, as has been recognized in several of my patients. Melancholia too, as Mickle has so conclusively shown, is seen to alternate with, precede or follow delirium of grandeur more often than formerly ob-

*Mickle on General Paralysis, 2nd edition, chapter 20, London, 1886.

served, and the feeling of *bonhomie* has given place occasionally, in my observation, to a sort of confident expectation that things would come out right, while recognizing that something was wrong with the head and to transitory hypochondria. A confession of bad memory and distress in the head, presented in my most recent case, a gentleman of "large business affairs who for the past several years has been conducting his own treatment by going to various sanitaria and traveling about for rest and recreation without consulting medical advisors.

He regarded himself as too nearly alright to require medical treatment and it was only through his brother that I was called to see him. He suffered from insomnia, a discomfort in his limbs which he singularly called "rheumatism insomnia," though he himself was disposed to take no note of it, and a restless ill at ease feeling and disposition to travel on imaginary imperative business.

Having a hypodermic solution of half a grain of morphia in my syringe ready, I inserted it under his skin simultaneously with the suggestion that he needed it for relief, securing prompt control of him and a more acquiescent disposition on his part later to accept further treatment. This advantage was steadily maintained by repeated subcutaneous medical ministrations of morphia or cordia with sodic bromide solution internally, strychnia, hyoscine, digataline, etc., until a remission of clear level headedness was secured in the patient, the remission lasting several days at a time and inspiring hope in the mind of the wife and friends, but not in me, of possible recovery. The sodium salt was administered with pepsine and pancreatic essence and hypophosphites. The patient became tranquil, self-satisfied and satisfied with his environments, and those about him and with what they were doing for him. His disposition under the dominance of the disease being ordinarily imperious and domineering with somewhat well-founded egotistical and extremely confident opinions of his business abilities and financial possessions but with no grandiose or limitless delusions of his wealth. His had been a financial success

in life and he knew it. His confidence in his business ability however, when apparently well, might be described as almost unlimited. His ability and success in managing men was extraordinary. But he wavered some in his illness and regretted that he could not do all he wanted on account of his recurring spells of vertigo. He had also occasional grandmal seizures when his environments were too contracted and the world was too small for him. He was a wrought iron range manufacturer.

He received scarcely two weeks treatment before his death and could go about and sit up until within a few days thereof. But his mind rapidly failed. Cardiac and vaso-motor paresis increased toward the close and he passed within five days, from a state of mental consciousness with a brief preceding period of exaltation to one of hebitude with flickering pulse and tachycardia. He then became comatose and finally coma and death came to him.

This man, after sojourning at a watering place for several years before his death, dissolved his business relations and re-engaged in a similar enterprise with new business associates, and with a good degree of financial success. The business still continues after his death in a prosperous condition, so well had he founded it even in his diseased mental state. There were frequent remissions in his mental condition, which resulted in his automatic propensity to go away to watering places, where, leading a quiet self-satisfied and restful life, he would temporarily recuperate by the temporary restoring of cerebral energy, and the recovery of a certain degree of mental balance. His condition was at times that of masked or latent rather than actual progressive paresis, such as we are most accustomed to see displayed. In this case the pupils were immobile, the knee jerks nil, sensibility of legs impaired, disposition naturally complaisant and amiable, was changed to one of indomitable absolutely unyielding insistence, which neither his wife nor his most beloved friends could change. He never departed from a once formed purpose.

The gates of perdition could not prevail against him in his imperious moods. The only way in which I could induce

him to take the first hypodermic was by having him stop to see me in his carriage en route to the train which he insisted he must take at a certain hour, and giving it at once without asking permission. I had previously arranged with those in charge of him to stop and see me on the way to the station for this purpose. He was then diverted from his purpose under half a grain of morphia.

A patient of mine so impressed me with the apparent curability of paresis in its earlier stages that I reported it in the literature some years ago, (*vide ALIENIST AND NEUROLOGIST.*) But that patient after effectual treatment with bromide of sodium, etc., which the patient imagined was for the cure of hemorrhoids, relapsed after about six weeks of resumption of business, into his old condition of active paresis and died.

I have seen the disease of late years in men between thirty and forty more frequently than formerly, and more often in women.

How are we to account for the change in the type and the earlier accession of the disease? By the precocity, I think, and the more general diffusion among the people of all ages and conditions, of business schemes, ambitions, excesses in gaiety and folly and opportunities to tax and overstrain the mental faculties by the increasing diffusion of knowledge of the ways of business, by the spread of intemperance and immoral and brain exhausting life in ways too many to mention. By the constant rush and restlessness of living, new conditions and more rapid, incessant methods of business, and by pleasure's dissipations. The pace that kills is the pace that precipitates paresis. It is the best mentally endowed, if they are so unfortunate, consciously or unconsciously, to contract specific disease, who especially become paretic while in the more gravely neuropathic, other forms of brain and nerve trouble are precipitated; mania, melancholia, neurasthenia, cerebrasthenia, neuralgia, etc.

The telephone, the graphophone, the phonograph, the long-distance phone, the megaphone and wireless telegraphy, as well as the ocean cable and the rapid modes of travel, are determining factors. For with these annoyances to man

the night cometh as of yore, but many a man sleeps not in consequence thereof. The vigilance of one's business, by these means, passes often into that morbid vigilance that robs the psychic gray cortex neurons of the rest they need for daily recuperation and paresis is precipitated as other forms of insanity are brought on in the organically predestined.

The age in which we live has made fatal advances. Since Bayle first correctly described paresis, in the opportunities it gives for the younger men and women to get into the swim and push and rush and whirl of life. Opportunities for becoming participants in the excitement and strain of life and procession of death are extending more and more among women. These widened opportunities account for the earlier breakdown of men and the more frequent falling of women under general paralysis.

The earlier observations and descriptions too, as said in the beginning, were made within the walls of insane asylums. Since then the type of the observer has changed and the range of observation has extended. We now see other phases from a wider field of observation and a broader knowledge in viewing it. But the types as now observed are more variant, partly because it begins earlier, probably, before cerebral vascular and cell degenerating changes have advanced so far as formerly, when they came under expert clinical observation, and partly because treatment is begun earlier and is more intelligently conducted than heretofore. We repress its symptomatology better.

The increased traveling and recreation habits of our American people, as well as the advanced alertness of the profession in its search for impending paresis, have contributed to modify typical expressions of the disease through a better understood management.

In my own clinical experience with paresis an active sodium-bromide and nerve tonic reconstruction treatment with suitable and timely recreation, rest, well secured nutrition, abstention from alcoholics and long enforced regular sleeps have secured arrests for longer or shorter intervals in the progress of this disease, sufficient, often, to inspire false

hopes of cure in non-medical friends and sometimes to result in wrong medical advice as to the discontinuance of treatment, one of my cases having improved so much as to be wrongly advised that only travel was necessary to establish recovery, but the result was a speedy fatality.

There are also typical features of posterior spinal sclerosis like as shown in the following:

A married man thirty years of age, the father of two healthy children, always temperate as to alcoholic indulgence, a dry goods merchant and clerk since the age of thirteen. Fourteen years ago he had typhoid and eight years ago he had la grippe. He gives no history of syphilis or of severe exposure to bad weather, as he understands it, and has no skin eruption. His stomach is atonic and he suffers with dyspepsia with slight eructations. He has the Argyll-Robertson pupil, shows the Romberg sign when attempting to stand with feet together and eyes shut and has uncertain feeling under his feet, with ataxic gait when walking.

There are no cincture sensations or fulgurant pains, no evidence of multiple neuritis, no history of rheumatism, plumbism or neurotoxicity from any other cause, yet I think a diagnosis of locomotor ataxia is the only solution of the symptom grouping, notwithstanding the lightning-like pains are absent, though they are severe in true locomotor ataxia.

This cursory view will renew our interest, it is hoped, in the medico-legal stage of paresis of Legrand Du Saul and help us to look for other varying features of this interesting disease beyond its prodromal stages.

THE LEGAL DISABILITIES OF NATURAL CHILDREN JUSTIFIED BIOLOGICALLY AND HISTORICALLY.*

By E. C. SPITZKA.

THE mantle of Charity, named after Him, Who made equity the condition of rightfully "casting the first stone," is used to cover no infringement of law and decorum with wiser discretion, than the one to which natural children owe their origin. Among the names of the offending procreators are some of the greatest, wisest and best of mankind; its pioneer benefactors; authors, to whom millions owe the highest intellectual pleasures; and heroic ideals of manhood held up as models for coming generations. He who guided the conquering and civilizing colonist from the Eastern to the Western Hemisphere, left as a vindicator of his aspersed name, a son¹ who had no lawful right to bear that name which he defended; but for his precipitated wedlock with Anne Hatheway, the greatest of dramatists had faced the predicament of having a beloved child² born, as it was conceived, prenuptially; one, whose name in Columbia's Temple of Fame, if it occupy a second place, is second only to that of the Father of his Country, had occasion to bitterly regret that youthful indiscretion, which made him parent to a Franklin³ who turned his back on father and fatherland during the struggle in which the former secured additional renown for an immortal name, and independent national existence for his land.

*An address delivered before the Society of Medical Jurisprudence, April 11th, 1898

To erase the names of the illegitimately born from the tablets of history were tantamount to decimation of its most celebrated actors; an elimination of the events molded by, as well as those participated in by such, would deprive our annals of most stirring, momentous and tragical episodes, leaving them therefore much nearer Montesquieu's conception of national happiness⁴ than they are. The notoriety attained by natural children, and the meteoric brilliancy of their careers make them appear at least fourfold more prominent than their numerical proportion alone warrants. Alas, there is thrown a shadow from their thus conspicuous record-column—"by merit raised to that bad eminence," as deliberate judgment of analytical historians must pronounce—whose baneful influence is but sorrily compensated for by the fact that the groupings of bastards on the clienian stage are as picturesque as romantic audacity, theatrical activity and unscrupulous egotism—their characteristics as a class—can render them!

Chivalry's proudest song floats down to us through eight centuries as it fell from the lips of the gallant minstrel-warrior who opened the battle through which was consummated in victory on the field of Hastings, what had been inaugurated by fraud on the reliquary of Avranches, to become picture-chronicled on the tapestry of Bayeux. The victory was won, the fraud perpetrated by the bastard Norman; and the wife who wove the tapestry had been made his by a procedure anticipated by the twin bastards who founded Rome, and imitated by another bastard, the victorious Marshal who carried off Madame Favart.⁵ The very word designating the class of which he was archetype was coined⁶ by the nothus of Robert le Diable and grandson of the Norman tanner. The song with which Tallifer advanced against Harold's "huscarles," celebrated the prowess and death of the love-child of Charlemagne, who himself, like his grandfather before him, was born of parents superior to the vulgar prejudice regarding prosaic formalities such as preliminary canonical marriage. Within four Carlovingian generations, three of which are represented by these princes, there was transacted a strangely retributive

historical drama. It began by the outpour from the northern end of a certain pass of the Pyrenees, of Abdurahman's Iberian host, to encounter defeat, and their leader death, under the Hammerer's strokes at Tours; it closed at the southern end of the same pass, where the Iberians avenged this defeat by the illegitimate Charles Martel on his illegitimate great-grandson—when protecting the retreat of the illegitimate grandson—for at fatal Roncesvalles were lost to France: battle, army and bantling paladin.

There have been assemblages of historical figures, amongst which it had been difficult to cast pebbles without striking more than one bantling and the belongings of such The ball from Bothwellhaugh's carbine, which slew that Regent,⁷ who "on the wrong side of the blanket" was Mary Stuart's brother, killed the steed of a second bastard,⁸ half-brother of a later Regent, and had been discharged from a dwelling owned and prepared for its fell purpose of assassin ambush, by another illegitimate brother⁹ of a third Regent of thrice unhappy Scotland.¹⁰

Permit me in sketchy illustration of a subject, whose history is redundant of startling tableaux, to shift the scene across the channel, and to that later day, when a hitherto unbroken line of sovereigns already abjectly humiliated in their representation by personified inertia, is about to be cut short by the dropaxe. The victim failed, as mightier ones might have failed, to liquidate debts, incurred during a century of pandering, prostitution and pilfering under less inert, indeed—as breeders of bantlings—perniciously over-active predecessors. Their bankrupt heir proceeds to declare his innocence of ancestral mismanagement; but those who sternly exact from the sixteenth Louis, expiation of the crimes of his grandfather, cumulative as these are, of those of the latter's great-grandfather, anticipating this epilogue of the Bourbon tragedy, resolved to abrogate the chief actor's wretched privilege of delivering it. However the drummers who as preconcerted, are to drown his voice, appear to be paralyzed in contagious sympathy with the spell-bound people! Who excitedly urges them on by signal?

"Ho drummer! Quick! Silence yon Capet,
Says Santerre, 'with a beat of your drum,'
Lustily then did I tap it
And the son of Saint Louis was dumb."

It is not the patriot brewer general, as the author of the "Chronicle of the Drum," with writers of graver histories, has it; it is an uncle¹¹ to him whose head is held up by Sanson a moment later; one of Louis the Fifteenth's numerous contributions to bantlingdom is the sergeant-major who gives the order silencing his own nephew. A few years prior, the Eastern frontier of this same land saw the royal daughters of Beaufranchit's father, flying before the gathering storm-clouds of revolution; the rabble of Moret, lest the timid quarry escape the killing cruelty of the day of vengeance just witnessed, blocked the road taken by the fugitives. Who, with the chivalry of a Tancred and the sword of a Dunois, rode down the cowardly rabble and rescued Mesdames? It was Narbonne,¹² their illegitimate brother; aunts are they and uncle is he, to him whose dying voice we just heard drowned by the orders of that other uncle, Beaufranchit. Other remarkable actors and episodes of those chaotic days may be traced to results of violation of the Seventh Commandment. The fateful "Diamond Necklace Affair," was manipulated by the offspring of a bastard branch of the Valois. The "ostrich egg," as Carlyle terms Pereyra,¹³ who like Franklin's son espoused a cause and adopted an allegiance antagonistic to his father's, was like him the outcome of an indiscretion in the youthful career of Maria Theresa's premier, similar to the one which marred the record of our first minister plenipotentiary.

From the dawn of history in legend and tradition, throughout the era of authentic records, the events directed by the illegitimately born, and bringing such to the surface, may be traced as a gnarled and knotty strand, twisting its disturbing course through the otherwise more evenly woven skein of national movement and racial development. Few of the great conquerors, usurpers, adventurers and rebels of olden time had escaped the slur of obscure and doubtful, or the smirch of bastard birth. Theseus and Romulus, Dar-

ius¹⁴ and Artaxerxes,¹⁵ Absalom and Abimelech, Jephthah and Dunois, Ptolemy¹⁶ and Charlemagne, Clovis and Constantine, Jugurtha and Genseric, Harefoot¹⁷ and William, Almagro and Pizarro, are but a few twin constellations on the background galaxy of historical bantlings. Under the leadership, through the influence or in behalf of natural children, were mined, convulsed and overthrown, the England of the Saxons, the Empire of the Incas, the kingship of France and the second French Republic.¹⁸ The founders and rulers of one Bulgarian,¹⁹ two Macedonian²⁰ and three Portuguese²¹ dynasties were bastards; so also were those who, established on wreckage, fortified with crimes, and left in record as history's combined Newgate Calendar and *Chronique scandaleuse*, the Merovingian, Carlovingian and Verheuil reigns in France. The Wars of the Roses were wars of legitimated and unlegitimated bantlings.²² The Master of the Munster riot-revels was the son²³ of a syndic by his bond-maiden. To the offspring of the Roman courtezans, Marozia and Vanozza, was due that infecting nepotic corruption, which crippled the usefulness and threatened the existence of the world's greatest hierarchy. Peru²⁴ and Pekin²⁵ were looted, Rome sacked, Florence crushed, Nelson's fame tarnished,²⁶ Austrian Elizabeth assassinated, and the forged "bordereau" exploited by the bastards Pizarro, Palikao, Genseric, Medici,²⁷ Hamilton, Luigini and Esterhazy. The sons of the concubines Chlapaida, Arlette, Blomberg and Koenigsmark were the victors in the world battles: Tours, Hastings, Lepanto and Fontenoy. The kindling of the flames of the Punic, and the rekindling into flame of the smoldering ashes of the Hundred Years War; the cruelties of Brescia;²⁸ the gallows of Arad; the Well of Cawnpur;²⁹ the plots against William and Mary; the Jacobite risings³⁰ of "Fifteen and "Forty-five;" the tumults of Rome and Laon;³¹ and the betrayal to sale, as well as the doom to stake and fagot, of the Maid of Orleans;³² were the work of bastards royal, and of bastards plebeian.

The greatest of empires of olden time began, and one of its greatest monarchies ended, under bastard rule; and the downfall of both was inaugurated or precipitated by

illegitimate children. The first serious check to the established world-supremacy of the former, was the annihilation of those legions, for whose return the Roman Cæsar apostrophized the Roman General in vain; they had perished because the extortionate rapacity of the bastard Varus,³³ unsated by the plunder of Syria, had goaded Arminius and his men to just revolt. But ere then, and more fatally sapped, had been the vigor of the great commonwealth, through festering contagion absorbed with the legacies of the incestuous and bastard Seleucides and Ptolemies. The first bribery of Praetorian cohorts, ominously presaging degradation and extinction of imperial dignity was undertaken with a bastard's insolent shamelessness, by meretrix-born Sabinus.³⁴ The patrimony of Alexander of Macedon, which, mountain-girt, survived the dismemberment of his empire, went down on Pydna's day of disaster and disgrace, when sarissa broke and phalanx collapsed, under the usurped leadership of fratricidal and bastard Perseus.³⁵

The migration of nations brought forward more than one bastard leader; frequently too, the leader of many other bantlings. Its more destructive swarms were invited or guided by traitors to their race, like an Eudoxia the *adulterine* daughter of Athenäis, or a Honoria, born in wedlock, if better than none, not as good as morganatic. These cataclysms, periodically rolling in thundering torrents over human affairs, as they swept away the noblest monuments of genius and patient labor, whirled up the lightest flotsam to toss as highest jetsam—safe from the retreating tide which engulfed the weighty and worthy—those refuse heaps, staining the shore of ruin, from which the historian traveler of a later day, might barely estimate the nature and value of the hopelessly lost, or speculate on what that which had been, might have grown to. Thus the names and deeds of the scourges of mankind and wreckers of its civilization, outlive the names of architects and writers, whose structures and manuscripts they destroyed. Among their blotting signatures, those of iconoclast bastards, predominate beyond even that degree of prominence predictable for their notoriety in tamer times. One of the most

destructive locust flights, which left in exchange for irreparable ruin wrought, a legacy of one name on the map of Spain, and one word in vocabulary, which comprehensively expresses indiscriminate rapine and wanton desecration, was led by the bastard Genseric, who had insinuated himself on the Vandal throne with the cuckoo instinct of the *nothus*, or as historians term it—his superior merit. Such merit concisely represented by one of them, in these words, “adventurous and formidable in war, cruel, hypocritical, malicious and of bad faith, both in war and in peace,” in similarly harmonious combination, is to be found in the Constantines, Clovis, Perseus, Williams, Pizarros,—in short,—in the bastard conquerors and bastard usurpers in history, generally.

The foregoing references to a number of individuals of illegitimate birth are made preliminarily, because it seems reasonable to suppose that the impress made on our ancestors through accumulated observation of their characteristics in similarly aggregated groups was the source of the ancient, wide-spread and, as may be made apparent herein-after, biologically sound popular bias which found a formulated expression in the laws on bastardy. Without wearisomely extending the list by such further *nothus* names and deeds crowding the chronicles,³⁶ allow me to anticipate so much of the conclusions to which study of the subject led me as may serve provisionally to justify this popular and judicial attitude: Throughout the course of human events bastards prevail in times which with civilized communities prove trying, critical or disastrous to the legitimately born majority. Wherever the soil of history is newly broken, the logical course of events becomes disturbed or vicissitude imperils their fruition, there—like weeds outgrowing the legitimate crop—the opportune adaptability and aggressive acquisitiveness of bastards ensures the rank growth of a bastard generation! As fugitive adventurers and daring usurpers, as gambling promoters and unscrupulous speculators, as time-serving demagogues with the masses, and parasites and panderers³⁷ with the great, theirs has been and still is the favoring field of action. When their influence

has been so extended, profound and enduring as to almost justify the discrimination of "eras³⁸ of bastardy," such were also eras of demoralization and dissolution.

The ethnic instinct appreciative of and based on the above fact is remarkable, in that it involves a conflict between popular sense and popular sentiment—the former gaining the day. To kind hearts and equitable minds, few episodes of social misery and abstract injustice, appeal more strongly than one—frequent wherever the Roman and English common laws underlie the statute:—an eldest child doomed to poverty and contumelious treatment because a ceremonial formality had been omitted when the sufferer was less than a minor! On its face the statute appears most harsh. Blackstone complains that "the Civil Law, otherwise so boasted of for its equitable decisions, is unnecessarily cruel" when it enjoins the father of a *filius nullius*,—which latter is *ipso facto* absolutely unable to inherit by testament—from providing for his offspring by gift.³⁹ The history of illegitimacy brings out in remarkable relief the partiality of fathers for their unlawful progeny.⁴⁰ It is in contemplating the results which have grown out of this paternal infatuation when these laws were violated, and which would have grown out of it on other occasions had such laws not hemmed its outpouring, that we shall find the older law as well as the Common Law of England (in so far as it follows the former) to have been framed with wiser foresight than one of the most eminent expounders of the latter seems to have realized.

The wail over the illegitimate and rebellious, yet nevertheless beloved "son Absalom," like the tender dying reproach of him, whom "ingratitude more strong than traitor's arm quite vanquished" echoes and re-echoes through the history of this subject. The feeling which it expressed is made manifest from the half legendary death of Aegeus,⁴¹ to the heart-broken demise of Russia's first Alexander.⁴² If such a thing can be spoken of as existing in that agglomeration of superficialities, Charles II, it was his only deep sentiment; at least it was so controlling that royal dignity, chivalric respect due a Queen, the interests of public mor-

ality, the to a king sacred laws of heraldry and of more serious import to his subjects, the treasury of England, were frivolously sacrificed in behalf of a bastard about whose paternity a wiser child than Monmouth might have been endlessly perplexed. The capture and irredeemable fate of Enzio embittered if it did not shorten and abort the career of the most powerful emperor in mediæval history. Exaggerated to infatuation, such paternal partiality has rendered those in whose hands rested the destinies of nations, nay of the whole Christian world, so one-sidedly wrapped up in the prosperity of their illegal offspring and so blind to every other interest, that therefor empires have been brought to the brink of ruin, entire provinces destroyed and their inhabitants degraded if not exterminated. Royal fathers not recking the consequences to the peace and prosperity of their subjects, have endeavored to overturn the very laws by virtue of which they had ascended and occupied thrones⁴³ in order to seat on these their better-loved if basely born children. Failing to bribe and cajole his lawful sons out of their birthright, Albrecht of Thuringia involved his land in long wars, by attempting through intrigue and force to secure succession as Landgrave to illegitimate Apiz.⁴⁴ In the sea of troubles sweeping over it in wave on wave of assassinations, rebellions, civil wars and foreign invasions, which rose from that apparently insignificant source, the legitimization of Jane Swinford's bantlings, England had a melancholy opportunity to realize:⁴⁵

"That there's a doom which fates each wicked deed,
In endless chain, more wickedness to breed."

Louis the Fourteenth, in pursuit of his darling project to place the Montespan bastards in the line of succession as Princes of the full-blood royal, undermined government, by striking at the only sound root of monarchy: its legitimacy. It would exceed the confines of a paper to relate the profound changes in the policy of France,⁴⁶ the systematic corruption infecting all classes, and the century enduring misery entailed by the royal mountebank in order to advance his natural children. The fourteenth Louis found no subterfuge unworthy of a king, no forgery beneath the

"knightly gentleman," and no exertion too arduous for the sluggard, if it but aided in placing the worthless Duc de Maine in the line of succession to the throne. It is notorious that Louis legitimated or advanced to high preferment those who had what was in his reign the good fortune to be "basely-born." There was thus made a basis of precedent, on which, what even he realized was an innovation approaching the revolutionary could be firmly established. The law which dispensed⁴⁷ with the, till then, obligatory mention of the mother's name in the register legitimating natural children was made in consonance with the same purpose. But Louis went further; he and his Maintenon conceived it possible to repeat the trick of Lysander, and revamp the fables of antiquity and of the Seventh Century, in the Seventeenth; a mysterious farrier⁴⁸ with a supernatural communication, having well rehearsed his part, was to justify by a pretended message from a deceased queen, the legitimization of her rivals' bantlings. With the abandonment of this swindle the royal resources were not exhausted. An accommodating author wrote a treatise⁴⁹ to prove that bastardy was so common an episode in the history of French kingship that it might be regarded as its characteristic feature. The writer needed to have gone but one step further to establish for bastardy the position of an essential pre-requisite! But even falsified history while it became the talk of the boudoir and admiration of flunkies and parasites, could not reach all classes of the French people, and all these classes must be pervaded with the loose notions pleasing to the King, to render a subversive and an immoral scheme feasible. To accomplish this, a law was enacted which eventually, owing to the moral sense of the masses being too deeply rooted to accommodate their sovereign, became inoperative. A tax was imposed on marriage licenses, and of such exorbitant amount that the matrimonially inclined preferred living in what was wedlock before their consciences though concubinage in law, thus conveying the stigma of bastardy to their offspring, to suffering the governmental imposition. By this artfully contrived scheme⁵⁰ was strengthened the position of the royal bastards, and

under either alternative. Where the law forced the impecunious or economical to concubinage, it multiplied that "misery" which "loveth" company, and rendered illegitimacy a familiar and natural thing in the public eye. Where the people preferred to submit to extortion rather than disgrace their coming children, the tax they paid flowed into the coffers from which the extravagances of the *Ducs* and *Mademoiselles* were supplied!

¹Don Fernando Colon, son of Cristoforo Colon and Beatrice Henriquez, a noble lady of Isabella's court. He wrote a biography of his father and also left a valuable library, the "Columbina," to a religious institution. The legitimate descendants of Columbus died out in the grandson of the "Adelantado" Diego Colon, Luis, who left only illegitimate issue. Another great explorer and conqueror left an illegitimate son to write his biography: Bias d'Albuquerque, author of "*Commentarios do grande Afonso d'Albuquerque*".

²Shakespeare's favorite daughter was born six (some accounts say three) months after marriage. Those familiar with Sir William Davenant's claim of Shakespearean paternity, may feel inclined to impugn the great bard in addition to this "mantle-child" an adulterinus; the claim is amusingly sustained by an episode related in the Oldys, M. S. The young Davenant, being met by some neighbors as he was running with great swiftness was asked whether his hasty run and replying, "to meet my god-father Shakespeare" while commended as "a good lad," was warned against "taking the name of God in vain."

³William Franklin, born 1729. He served as Tory governor of New Jersey, and actively aided the British at the very time his father was impeding the passage of the British fleet up the Delaware, and later effecting alliances with France and Spain. In addition to William, our great statesman had another natural child, a daughter.

⁴"Heureux le peuple d'nt l'histoire est ennuyante."

⁵The Marshal Saxe infatuated with Madam Favart, and finding the lady virtuously loyal to her "unaccommodating" spouse, resorted to the, to modern thinking, inconceivable procedure of securing Mr. Favart's incarceration in the Bastille by *lettre de cachet*! Under this arbitrary process, the man who had shown the same good taste as the distinguished son of Aurora Konigsmark, but been guilty of indulging that taste in a more lawful manner than his rival, was kept imprisoned until he became convinced of the "erroneous views" he entertained as to marital rights.

⁶He combined two words, *bais* (Old Irish) and *tardd* (Kymric) which were written in Irish and Welsh *basbard* and *bastarg*; in Armoric as in modern English, bastard. The translation of this Celtic compound is "lust-child." Some German philologists derive the word from *bast-hart*, supposing it to be an ironical designation indicating that the bastard is as hard (genuine) as the "bast" or soft inner bark of trees. This is a sample of the far-fetched in philology. William certainly knew whence he obtained the term: there is less foundation for the *bast-hart* theory than a rational guess, and there are better irrational guesses at the service of ethnological philologists. The *Bastarnae*, for example, were a mongrel race, and according to most authorities they were Celts, (Gauls.) Then again, *baisse* and *tarer* might have been more reasonably supposed to underlie the origin of a word born on French soil.

⁷The Earl Murray, Regent of Scotland, who wisely deposed his sister, Mary Queen of Scots, was a natural son of James V and Lady Douglas.

⁸George Douglas of Parkhead: he was illegitimate half-brother to Earl Morton, the later Regent, who was executed with the "Maiden."

⁹The Archbishop of Saint Andrews, who was the proprietor of the house, from whose gallery the assassin (his nephew) fired the fatal shot, was natural brother to the Earl of

Arran (Duc de Chateauherault.) Another member of the same clan, which bye-the-bye has furnished a number of cases accumulated in the statistics to be mentioned, including the mistress of Nelson, and a member of the cabinet of our first president—furnished the horse on which Bothwellhaugh escaped.

10 Mary Stuart lived in times prolific in subjects for these lines. A fourth illegitimate descent converges towards her cause. Edward the Fourth, after the condemnation and forfeiture of Jasper Tudor, gave the Pembroke title to Wm. Herbert, a descendant of a natural son of Henry I, captured by King-maker Warwick and executed, his son was compelled to "exchange titles" becoming Earl of Huntingdon. This Earl died without legitimate issue, his natural half-brother was created Lord Herbert and Earl of Pembroke [by Edward VII]. The new earl having participated in the assassination [under legal forms and by public execution] of the great Protector Somerset and then espoused the cause of Mary Stuart, was forced to fly Britain, and seeking refuge in that natural home and subsequent grave of the Stuarts, France, founded in that land the House of Powis.

As to Mary herself, the fact, that defiant of public opinion, and insinuations which such strange proceedings provoked and perhaps justified, she appointed Chateauherault, Regent of Scotland, under the retrospective if not *de facto* retroactive title of "Adopted Father," is calculated to lead to strange surmises. Her mother had been a member of the most corrupt French court, redolent of Medicean and Guise unsavoriness. Walter Scott needed not to have created a page of doubtful birth for Mary in his "Julian Avenel;" in real history her court and family were sufficiently tainted. As if to counterbalance the contributions to the subject, by the Stuart side in his ill-fated marriage Darnley also left a *nothus*. The latter founded a House of Lennox, which died out with its first lord.

11 By title this son of Louis XV was *Comte d'Oyat*, he acted as sergeant-major at the execution of his royal nephew: the mother was known as *la belle Morphise* (Lamartine, *Histoire des Girondins*, Livre 35^e p.505). I believe her the same with the Morphi and O'Morphi of Casanova's wretched memoirs, which latter contain a curious account of the methods employed in selecting fresh material for stocking the "Parc aux Cerfs" whose game-keeper was Louis the Fifteenth. The versatile adventurer cited, came in contact with the illegitimate tail-end of the Stuart series (at Avignon) in the person of a needy adventuress who had been, without serious impeding of the march of historical events, "legitimated" *propris manu* by her father, Charles Edward the Pretender.

12 Narbonne regarding whose maternal origin—his father was notoriously the fifteenth Louis—an insinuation of darker character than that of mere illegitimacy is referred to by both Carlyle and Lamartine, was a gentleman demagogue like the illegitimately descended Beaufort "*Roi des halles*." His political transformations were kaleidoscopic, for Madame de Staél was his Egeria.

13 "Walloon Pereyra might boast of the strangest parentage; him, they say Prince Kaunitz the diplomatist heedlessly dropped; like ostrich-egg to be hatched of chance, into an ostrich-eater!" (The French Revolution, a History by Thomas Carlyle, vol. I, book VIII chapter 3.) The "Della" or Madame T. of Paul Jones' correspondence, who appears to have been an actor in the troubled period preceding the revolution, was a daughter of Louis XV by a lady of court. With her our first commodore had a liaison, similar to, but of less disgraceful consequences than the one which another of Neptune's heroes had with that notorious natural child, the Lady Hamilton.

14 Ochus, also known as Darius Nothus.

15 Ardshii Batekan, the Artaxerxes of the Sassan dynasty, conqueror of the Parthians. In his, as in another "conqueror's" case, a tanner plays a part, but not as a relative by blood.

16 Ptolemy soter, P. auletes, P. of Cyprus and P. Apion were notoriously illegitimate: P. Philadelphus was like the rebellious Magas, probably adulterine of the seducer of Berenice.

17 Harold Harefoot was a natural son of Canute the Great, whose laws, like Constantine's, were exceedingly rigid as to offenses against the Seventh Commandment.

18 Louis Napoleon and Duc de Morny, respectively figurehead and manager of the coup

d'état were illegitimate sons of Hortense Bonaparte née Beauharnais. The former was *adulterinus* by Admiral Verheuil, the latter *nothus* by Count Flahault. It is one of the ironies of that vaudeville phase of modern history, that the adventurer, who under the assumed prestige of a great name became emperor, had no Bonaparte blood in his veins, while the Bonaparte in his cabinet of conspirators and croupiers, who was of genuine blood, was like him, not of legitimate birth; this was Walewski. The first Bonaparte had had by Countess Walewska, the Count Walewski, whose liaison with the actress Rachel, another cabinet official was the issue of. How near the Third Republic was brought to disastrous *émeute*, through the bastard Esterhazy's daring forgeries, those following contemporary history must realize. It may be said that from the establishment of the Merovingian and Carlovingian dynasties to the two great revolutions, if bastards have not always been the chief spirits, they have played important parts at every important phase of French history. If the great revolution had not occurred when it did, or shortly thereafter, and France had survived the immediate effects of the Maintenon, Pompadour and Dubarry intermeddlings, it would have degenerated through sheer inanition, so overgrown was it, and so much more did it threaten to become overgrown with parasitic royal bastards from those of the Valois blood down, through nearly the entire Bourbon series, nay, even by the bastards of these bastards, as well as the natural children of great lords, all of whom claimed and most of whom obtained titles and positions from duke down to "Chevalier," and generals to Abbe and collectors of taxes and customs.

19 Alexander of Battenberg, one of the most sympathetic personages of recent history was the issue of morganatic union between Prince Alexander of Hesse and Countess Hanke.

20 Olympias, mother of Alexander of Macedon, was of the Molossian royal line, named after its founder, an illegitimate son of Neoptolemus, who was also illegitimate, having been procreated by Achilles, (the history of whose own origin is as refreshingly impudent as Merovig's) while a "female impersonator" in King Lykomedes gynaceum. The Macedonian dynasty proper, had the dull monotony of legitimate succession, interestingly varied, from time to time. In addition to its bastard rulers and the illegitimate Ptolemy who rebelled against Perdiccas, that Ptolemy who followed Alexander to Asia, became founder of the Egyptian line and father to him who preserved the Scriptures in the Septuagint version, was also one. The so-called Macedonian dynasty of the Lower Empire, was founded by a usurper who with overwhelming probability was of like birth, Basileus I. A separate dominion in Epirus was established by an illegitimately born Angelus, and after its fall, reestablished by a second bastard, Michael Angelus II.

21 Spain also has its share, as indeed have most European states. The family now on the British throne has two streaks of illegitimate blood, whose source is however authenticated, which cannot be said for the Russian. The illegitimate Henry of Trastamare, who treacherously slew his legitimate brother, Pedro of Castile, had a legitimate son Prince of Asturias. Pedro had a natural daughter, Constance, married to John of Lancaster; their daughter Catherine married Henry of Asturias, consequently the issue of this latter marriage, John II of Castile had the double bar sinister, one from the victim's daughter maternal, the other grand-paternal from the fratricide. A Portuguese line was founded by "John the Spurious." Another, the Braganzas, began with the *nothus* Alfonso I. Still another the "older Burgundian line" began with an illegitimately born queen. At the time Portugal revolted against Spain and eventually established its independence, the first claimant to assert alleged throne-right was Dom Antonio, illegitimate son of Dom Luis, a sort of Monmouth to be hereinafter mentioned.

22 These wars terminated with the accession to the throne of a descendant of a natural son of John of Gaunt "time-honored Lancaster," one of the ill-starred (for England) bevy he had by Jane Swinford. *vide seq.* Among a number of bastards, who as pretenders or military adventurers played subsidiary parts in that troubled period, was the Fauconbridge or real history, whose name Shakespeare utilized for that "bastard" in King John who concludes that play with the noble words which shall bestir the heart of man, as long as English is read, and the language spoken on the stage. The real Fauconbridge was a natural nephew of "Kingmaker" Warwick.

23 Jan Bockold or Bockelson, known in English works as the "Prophet" John of Leyden.

24 With little enduring profit to the looters, for Pizarro, Almagro and the like forerunners of Barnato, exterminated each other. The second Almagro, a bastard son of the original partner in that piratical firm which overthrew the Incas, reproduced his father as to birth, character, career, as well as in the final catastrophe with which this ended; for both were bastards, greedy and cruel conquistadores, treacherous conspirators, and perished by the hands of the executioner.

25 The plunder of Pekin eclipsed another characteristic bastard achievement by Montauban, afterwards Marshal Paillaco (Charles G. M. Cousin-Montauban, bastard son of a daughter of General Launay de Picardois, personally conducted the looting of the Emperor's palace.) He participated in one of those singular repetitions of history which are at once transactional and geographical; the capture of Abel-el-Kader. Herein he showed more abnegation of self than did Sulla in the parallel case of Jugurtha, for while the boy no means over-scrupulous Roman, left the "dirty work" of betrayal, by word of honor broken, to an allied native prince, he performed it himself and obtained the order of the Legion of Honor for it, too! Interesting details of demagogic effrontery and mendacious sang-froid shown by this same paragon, bastard and worthy forerunner of the so-called "Esterhazy," are to be found in Sarcey's "Siege of Paris."

26 "*Cherchez la femme*" to find the real perpetrator of the unEnglish and perfidious execution of Carraccioli, the regrettable stain on Nelson's proud record. The bantling street-walker, later "Goddess Hygeia" of the quack Doctor Graham's "electro-conjugal bed" (L. C. Gray 1); next the pioneer poser for "Living Pictures" [Goethe, Italian letters of dates March 16th and May 27th, 1787]; and eventually as wife of the Ambassador to Naples "Lady" Hamilton had the victim of Abukir so completely enslaved, that his, otherwise proud and magnanimous nature, shrank not from acting the part of "Jack-Ketch" to a nobleman who had shown himself a valiant brother-in-arms side by side with Nelson in the action under Hotham. The oft-times ridiculous subserviency of the parvenus to the real aristocracy, is exaggerated by parvenus of bastard birth—for example, her "aristocratic plotting" led Dubarry to the scaffold. That Queen Caroline, to whom the strumpet toadied, might gratify her vengeful vindictiveness in the deep humiliation of Caraccioli by the halter, Lady Hamilton persuaded Nelson to deny the latter that which he craved as a boon, though he might have claimed it as his very least right and privilege: a soldier's death.

27 Florence was besieged by a bastard Medici, Clemens VI, on behalf of a bantling regarded as his, who could however have taken his choice between three putative fathers: Alessandro Medici. After the siege the great Michael Angelo, who had assisted in the defense was in danger of life at the hands of the latter—villainous quadroon who as Duke of Florence crushed what little independence and culture had been left in that capital of the "Renaissance" by a ruinous war. The sovereigns of that day provided well for their bantlings: Alessandro was married to Margaretha [afterwards of Parma] natural daughter of the Emperor Charles the Fifth.

28 Hiero II of Syracuse, an exposed, but subsequently redeemed bastard of Hierocles, through intrigan opportunist and opportune veering about, was the occasion of the "First Punic War;" the bastard of Mareuil, who surprised and assassinated Charles of Spain in bed, on behalf of Navarre's Charles the Bad, provoked that phase of the long Anglo-French war which was marked by the Poictiers victory of the Black Prince; General Haynau, the "Hyena of Brescia" and "Hangman of Hungary" was an illegitimate son (by an apothecary's daughter) of William I, Elector of Hesse.

29 Nena Sahib, natural son of the Maharadschah Badji Rau, angered by the dilatory policy of "John Company" in regard to his claim to succeed his father, wrote his revenge on the darkest page of the bloodiest chapter of India's history. One might speak of retribution had that retribution not fallen exclusively on the innocent, for Nena had through the crooked policy of the company, which when it could employ a bastard to foment dissensions always opportune for the company's purposes, found a natural son of Asoph ed Daulah good enough to succeed his father, a precedent for action in his favor; and it was not the sole instance. In another case the English government, which knew and dreaded Benjamin Franklin's energy and resources, endeavored, but vainly, to weaken his allegiance to the cause of the colonies, by heaping honors upon his natural son.

30 The Earl of Derwentwater executed in 1715 for his share in the first rising, and Ratcliffe his brother, who escaping on that occasion, took part in the second, and was executed for it in 1746, were the sons of Sir Francis Ratcliffe by marriage with Mary Tudor; Mary Tudor was natural daughter by Charles II of the illegitimately born Moll or Mary Davis.

31 Crescentius, the leader of a Roman revolt was a natural son of Theodora, *adulterina* of the elder Theodora. The natural son of Sieur de Courcy, named de la Marie, was the leader of the tumults of Laon and other savagery so ferocious that for appearances sake, his own father was ordered by the king to take the field against him, which he did in "appearance" only.

32 Jeanne d'Arc was captured by the "Bastard of Wandonne," and delivered to Jean de Ligny, who sold her for 10,000 francs to the English; the first judge to try her, Jean Cauchon bishop of Beauvais, is said by J. Scherr to have been a natural son, and Beaufort, the cleric of Winchester, who had the false evidence on which the second trial [which ended in the capital sentence] manufactured, and inspired the prosecution, was one of John of Gaunt's natural sons. Beaufort was not the only Incumbent of the See of Winchester [he became cardinal] of illegitimate origin. Pierre des Roches from Poitou, who displaced Hubert de Bourg, imported his bastard Pierre Rivaux to make him Bishop of Winchester. Jeanne d'Arc's day and environment were notable for prominent illegitimates; to compensate for her three bastard foemen, she had a gallant brother-in-arms: Dunois, the Bastard of Orleans.

33 Publius Quinctilius Varus, after having squeezed Syria—assigned him at the time of Christ's advent—dry resumed his extortions in his next province which unfortunately for him was then a much poorer one, and more fruitful of blows than of "booty." His defeat in the Teuburg forest broke the spell of Roman prestige, and after a lull, the tide of conquest turned to sweep across the Alps in the direction of Rome. Besides another Varus, who fell at Munda against Julius Caesar, there was a Varus of illegitimate birth, father to the lesser of the legions. Like the illegitimate father and son Almagro; the two Varus resembled each other in birth and death: both committed a deed, rare among bastards—suicide, but under circumstances, indicating the "practical politician;" that was when defeat and a worse death were inevitable—for the elder Varus ended his career where Brutus and Casca—of whose party he was—closed theirs.

34 Nymphidius Sabinus. His mother was a certain Nymphidia: her son claimed Caligula as father. The current opinion was that while Caligula's habits made such paternity possible, the probability had to be divided among so many synchronous possibilities, that the wisest child had been puzzled to decide for any one of them. Tacitus [Lib. I and Lib. XV, Cap. 72] waxes eloquently indignant at this dishonorable abettor of Nero's crimes (he was an active agent in the first proscription) and takes much satisfaction in the fact that as he was the first to resort to the system of corruption of the troops: he was likewise the first of the series of like bad men to fall by his own device and die a violent death.

35 The intrigue, forgery, creation of false appearances against a brother and simulation of filial solicitude of this cold-blooded usurper causing a dying father to have his legitimate and loyal Demetrius slain, [History by Livius, Liber XL, Cap. 8-16, 20-24 and 54-56] as well as the callous self-possession with which he witnessed his father's fatal grief, on discovery of the treacherous plot—for Philip died heart-broken, may well have been in Shakespeare's mind when he created that master character, Edmund in "Lear," a monster of unifilial and unfraternal cruelty, and master of simulation and forgery—the bastard brother of Edgar.

36 Not to mention the names associated with events appertaining rather to the kaleidoscopic phantasmagoria, than to the intrinsic kernel of history; two examples may serve to entertain the curious. When, as the poet summarizes Scotland's fate at Flodden: "broken was her shield," that fate had been strangely linked with one whose own shield bore the bar sinister; the pretext which enabled Lady Heron to act the spy for the Earl of Surrey was a mission on behalf of that Heron of Ford who was involved in the murder of Sir Robert Ker by his bastard half-brother. Doubly weighted was the fate of Essex by bastard product and production. The nominal occasion for his recall and imprisonment grew out of his having been duped by wily "Matthew the Blacksmith" (*adulterinus* of Con O'Neill); a deeper and more cruel reason, was that Leicester having, as the old chronicler quaintly says, "gotten the Lady

Essex with childe by him—" a performance duplicated by the same Leicester on Lady Shefield, who bore him Robert Dudley—had reason to dread Essex being left at liberty to avenge the wrong thus done him.

37 Wm. McMahon (afterwards knighted for services rendered) was a natural son of Lord Leitrim's butler by a chambermaid. Successively scullion, excise-man, strolling actor, volunteer under Lord Rawdon in the war against the American colonies, he eventually became what Huist (quoted by Banvard, *Life of George IV*, chapter viii) terms the "prudent and parasitical" purveyor to the voluptuary Prince Regent of England. A cotemporary and female counterpart was the "Mother Goose" who brought up a number of illegitimate daughters, to a life of infamy, corrupting the youth of England's great university. That similar adventuresses have established their foot-hold at corresponding institutions on this side of the Atlantic must be evident to those who collect the suicide items, relating to academic students, and familiar to the medical advisers of their families. The results of this peculiar "industry" may occasionally be studied as a factor—if not exclusively etiological—an intensifying or a modifying one in constitutional and adolescent psychoses.

38 "We were in the golden age of bastards," said St. Simon (op. cit. vol. II, p. 142) aenent the "prodigious" advancement of Berwick "Fitz-James." Gregorovius (Op. cit. vii, p. 123) uses exactly the same designation for Italy about the years 1440-1470, when the illegitimates, Borso, Sforza, Ferrand and Malatesta reigned respectively over the principalities of Ferrara, Milan, Calabria and Rimini; these did not exhaust the list of princely and gubernatorial bantlings of that period and country.

39 The distinction between "Inheritance" of estate by legitimate offspring and "gifts" made to natural children, was made in patriarchal days, and as under certain of the codified laws of later days "gifts" were made to the recipient during the life-time of the donor and not by testamentary bequest: "And Abraham gave all that he had to Isaac. But unto the sons of the concubines which Abraham had, Abraham gave gifts, and sent them away from Isaac his son, while he yet lived. * *"—*Genesis xxv, 5-6*

40 The German-Roman Emperor Arnulf, himself a *nothus*, in order to secure for his beloved bastard Zwentibold the succession, libelled the virtue of his wife so that the legitimacy of his children by her might be impugned to Zwentibold's advantage. A bitter conflict had already been commenced by the latter, (a sort of Clovis in character) but the death of Arnulf nipped the scheme, and Zwentibold was killed in the tumult of rebellion, like Pippin the *nothus* of the third Pippin, who perished under similar circumstances. The infatuation of Alexander for Caesar Borgia and results are elsewhere mentioned.

41 When Theseus returned from his piratical excursion to Crete, the pre-arranged signal indicating his death was mistakingly let fly, instead of the one which should have announced his safe return; the shock caused his father to destroy himself.

42 The death of a favorite natural daughter produced the emperor's melancholy which attended by a gradual failure of "vitality" ended life. A monument in the "Garnisonkirche" at Berlin is associated with a similar incident and commemorates the death of young de la Marck whose father, distinguished, as the son promised to have become, for giant size and strength died heart-broken after his son: both were of illegitimate birth—the younger de la Marck, like the younger Almagro, Walewski, Charles Dudley, Varus, Franklin (Wm. Temple) Herzen, and Sittich being *nothus* of a *nothus*.

43 Legislators have hastened to repudiate and revoke their mental offspring conceived in wisdom and matured after years of deliberation, when such ran counter to the interests of their creatures of passion and moments of impulse. The first act of Pericles, after his obtaining a controlling position in Athenian government, was to procure the repeal of a law he had caused to be enacted against bastards. The reason was that he had a bastard son who was debarred the privileges of citizenship by an ordinance whose conception had preceded this son's by years. Under that law, while operative, about five thousand bastards had been

sold as slaves. The Athenians acceded to Pericles' wishes, moved by pity for a father whose legitimate descent had become fatefully extinct.

44 In court histories Albrecht is stigmatized as "*Der Unartige*" (the naughty). Apitz was his son by Kunigunde Eisenberg, a maid of honor of his wife's.

45 Schiller's "Piccolomini."

46 The chief if not the sole cause of the resentment felt by Louis against the Prince of Orange, fruitful source of the bloodiest wars, was the reply made to the former's offer of a bastard daughter (The Princess de Conti) as consort: "The Sons of Orange are accustomed to marry legitimate daughters of princes and not their bastards." Holland is to be credited with another cutting reference to bastardy. When the Netherlanders sent a petition of grievances to Phillip II, they made a special point of insisting on a legitimate Stadt-holder being sent them to replace the bastard Don Juan d'Austria.

47 Speaking of the Maréchale de la Ferté, St. Iimon (Op. cit. vol. II, p. 262) says, "I will not be forgotten that it was under cover of the Maréchale that a natural child was first legitimated without naming the mother, in order that by this example, the king's natural children might be similarly honored without naming Madame de Montespan, as I have related in its place."

48 In the end the King and Madame succeeded only in illustrating Oxenstierna's dictum as to the minimal wisdom with which governing powers are content. No doubt the profound daze and startling reflections produced in St. Simon's mind, were shared by other courtiers. These were of such a nature that the reasons why St. Simon hid his memoirs so carefully, and that they durst not have seen the light as long as a Bourbon ruled, a *lettre de cachet* could be enforced or the Bastille stood, are glaringly evident. See Memoirs. vol. I, chap. 15.

49 When the peace of Utrecht was published at Paris, Monsieur and Madame du Maine, "who wished to render themselves popular * * showed themselves on a balcony to the people to whom they threw some money—a liberality that the king would not have permitted in anybody else." This granting of a privilege peculiarly a regal one, and allowed only to the heir apparent when in the best graces of the reigning monarch, St. Simon regarded as a sample of the same disposition and policy of the king, which took the form of 'a new and assuredly a very original History of France. * * * * Never was French so clear, so pure, so flowing with such happy transitions: in a word, everything to charm and entice the reader; admirable preface, magnificent promises. * * * * As for the history, there was much romance in the first race, much in the second, and much mistiness in the early times of the third. In a word, all the work evidently appeared composed in order to persuade people * * * that the majority of the kings of the first race, several of the second, some, even of the third, were bastards, whom this defect did not exclude from the throne or affect in any way. * * * The King spoke of it to several of his Court, asked if they had read it; the most sagacious early saw how much it was protected; It was the sole historical book the King and Madame de Maintenon had ever spoken of." The work which contained nothing except what served as a plea for bastard succession became eventually recognized as a very wretched history, which had very industriously and very fraudulently answered the purpose for which it was written; but its author obtained the, for that day, prodigious recompense of two thousand francs, and was appointed "Historiographer of France."

50 I am reminded that while Louis possessed the moral callousness which would sanction, and the serene selfishness which would willingly profit by such a scheme, its planning was above his intellectual level. Be that as it may, had it succeeded, it would have approached in diabolical humor the transactions culminating in the murder of Bajazet's brother by his hosts. The Borgias, who were revelling in the wealth contributed as "Turk-tenth" by Christendom for a crusade against the threatening Mohammedan assault, held this crusade over his head *in terrorem* with the coupled threat of arming the fugitive brother-claimant Djem in the campaign against him. Bajazet offered the Borgias an enormous bribe to remove his brother from the vanities of a wicked world. The expert toxicologists were not only equal to the task, but made two sales of the same piece of goods. They sold Djem to the

French King, cash on delivery and alive as guaranteed but with *ingesta* which closed Djem's career a few days later, and Bajazet paying for the *dead* Djem, the Borgias pocketed two princely incomes while enjoying a third, the tribute collected under the pretense of a crusade against the very Sultan whose pensioners they were! To find equally symmetrical, skillful and stupendous villainy, one must go to Clovis or Perseus in history and 'Reynard the Fox' (whose remote original I believe to have been intended as a covert satire on Clovis) in fiction. As to the mere sale of Djem, Borgia had indeed a precedent; another *notus*, Franchesetto Cibo, had attempted to sell the Turk to Alfons of Naples, but the bid had been too low for that rapacious bastard.

(*To be Continued.*)

RELATIONS BETWEEN NEURALGIA AND TRANSITORY PSYCHOSES.*

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UNUSUAL and still correct is the statement that certain phenomena are forms of peracute psychical disease, temporarily and genetically connected with neuralgia.

Owing to the enormous frequency of this disorder and the great rarity of attending psychosis, special dispositions, chiefly the coincidence of very unusual conditions, are essential to bring about this connection.

The ways in which a neuralgia might react on the psychical organ must first be observed: the *psychical* factor of pain, the *organic* factor of a disorder of the psychical organ directly from a peripheral process of excitement, indirectly by way of a functional disturbance of the vaso-motor centres and tracts, and thus a change in its circulatory relations (vascular spasm or paralysis).

But from the standpoint of clinical experience the suggestion is obtruded for the explanation of the rarity of insanity due to a neuralgia, that in such cases the neuralgia might have a symptomatic import, *i. e.* could be the symptom or syndrom of a permanent morbid neurotic state.

Very frequently epileptic and hysterical neuroses are met with in such cases.

All difficulties for the pathogenesis would be removed, if the sensory affection here had the significance of an aura of a subsequent psychical equivalent of one of these neuroses, or at least (hysterical cases) played the role of an

*Translated by Dr. W. Alfred McCorn, Resident physician "River Crest" Astoria, New York City.

agent provocateur, or that of the spasmogenic zone of a seizure of hysteria gravis limited to the *phase de délire*.

Such a symptomatic significance must at once be thought of in a neuralgia, when the attack is accompanied by a visionary state of consciousness and is followed by amnesia for all that transpired during it.

The honor of having first called attention to the clinical connection between neuralgia and transitory *alienatio mentis* belongs to Griesinger (1866) and Schüle (1867). The analogy of the cases with aura and epileptic delirium has not escaped these observers.

Further efforts have been bestowed on this obscure province by the author (1868 "Transitorische Störungen des Selbstbewusstseins," 1883 "Dysphrenia neuralgica transitoria," Maschka's Handb. d. Ger. Med. IV., 598), Anton (Wiener klin. Wochenschr. 1889, 12-14), J.v. Wagner (Jahrb. f. Psych. VIII., 287) and recently Laquer (Archiv. f. Psych. XXVI., 3).

In the attempt to arrange this clinical material according to the above pathogenetic point of view the *group of cases induced by pain through affect, then purely psychical*, appear first.

The simplest are the states of passionate excitement, related as affective conditions to the pathological affect, from transitory derangement of the psychical function induced by excessive pain (*tetanus uteri*) (see author's article in Maschka, p. 631 and Lehrb. der ger. Psychopathol., 3 Aufl., p. 385).

In the other cases of neuralgic transitory affective psychosis the neuralgia in the tract of the fifth, occipital and intercostal nerves are exclusively to be considered.

Cases of transitory psychosis, interesting as affective delirium due to neuralgia, seem to be very rare.

The case reported by J. Wagner (Jahrb. f. Psych. VIII., p. 287) seems to me such. Peasant's wife, evidently somewhat imbecile, has left conjunctivitis and neuralgia on the same side, became hypochondriacal, manifested *taedium vitae*. In the exacerbations, respectively attacks of neuralgia, which she thought to be the devil in her, the head pains were allegorized as an animal biting her.

The following case might be cited as pain, respectively affect, delirium.

Case 1. S., 23, medical student, was admitted to my clinic on October 9th. No hereditary taint. Of a peasant family. Convulsions when a small child. Except scarlet fever and measles (about seven) has never been seriously ill. Normal mental and physical development. Since puberty, insomnia and diffuse headache frequent during the hot season. Heart palpitates during emotion. Slight tolerance for alcohol. Vita sexualis normal. Does not drink.

On October 2nd, 1893 a carious molar, which had given him pain for a long time, was drawn under an anæsthetic.

The pain in the jaw continued and being violent deprived him of sleep. On the 8th two teeth extracted. No relief. On October 9th the patient took some rum and one-eighth liter of wine to procure sleep, not having slept for eight days and eaten almost nothing, and slept a short time.

The patient is entirely ignorant of the following events of his own knowledge.

He awoke in a short time, complained of intense pain, became excited, wholly confused, gesticulated wildly, spoke irrationally, did not answer questions, continually exclaimed "clinic, dentist, papa telegraph," rolled about in bed. This lasted for two hours.

The patient was brought to the clinic, where he arrived perfectly lucid. After a while he again complained of pain, was excited for a short time, disturbed, railed at the dentist, the toothache, but then became quiet, slept well the rest of the night, felt perfectly well except some "drawing" in the jaw and objectively presented nothing abnormal psychically. He had only a vague remembrance of the time of the attack.

Skull normal, adherent lobules, neuropathic eye. Slight fine tremor of the fingers, knee jerk somewhat exaggerated, dilated pupils reacting promptly. Patient remained at the clinic until October 14th. He remained well afterward.

A neuropathic constitution might ever be present in

such cases of "pain delirium" and have a predisposing effect.

The cases do not differ essentially from other affective psychoses. References to the neuralgic factor eventually result in allegorizing delirium.

More difficult is the pathogenetic interpretation of the cases *not psychical, but organic due to neuralgia.*

As we know little of the dynamic effect of violent centripetal irritations (*e. g. neuralgia*) on the cortex and cannot well separate the influence of pain from the insomnia, etc., generally accompanying them, hypothesis is given free rein. Doubtless it might be that by continued pain the cortex is put into a state of abnormal susceptibility and exhaustibility, what might also be true of its vasomotor functions.

Laquer's assumptions with respect to his own case seem worthy of notice that "by irradiation of intense pain certain changes in excitability of the cortex and thus states of confusion and incoherence (delirium) on a hallucinatory basis, with more or less pronounced amnesia" may be produced.

A special predisposition could be presumed for which primarily a latent hysterical or epileptic neurosis, then a degenerative constitution of the nerve elements, might be thought of.

The heterogeneousness of the pathogenesis may be the reason the disease types are here so heterogeneous (mere dys-thymia with delirium still within the bounds between obsession and delusion, transient hallucinations to fully developed hallucinatory delirium, intense frenzy, raptus-like states, etc.)

The neuralgic factor may here find allegorical utilization, in so far as it forms the nucleus of the delusions.

The alterations of consciousness are very heterogeneous. In cases, where it is quasi a matter of a focal, circumscribed irritation of cortical areas serving for ideation and sense perceptions (concurrent ideas, concurrent hallucinations in Griesinger's sense), the clouding of the consciousness is very slight. Where the neuralgic irritation seems to act

through the vascular system (vasomotor reflex neurosis?), the consciousness is profoundly clouded and, corresponding to the diffuse brain change, the psyche generally disordered.

Scanty casuistics is found in literature for this group of vesania transitoria.

Griesinger's four cases are too aphoristically reported for certain utilization.

The first three (1. Woman, 40 years of age, inveterate neuralgia of occipital and fifth—hallucinations and absurd thoughts when she closes her eyes during the neuralgic attack. 2. Girl, supraorbital neuralgia on left side with confusion, psychical depression, eroticism. 3. Man, 45, right prosopalgia-hallucinatory delirium), I cannot accept with the author as pain delirium, nor the following case of Laquer's: Conductor, 54, without neurotic tendency. Does not drink. Rheumatic (?) neuralgia of the right fifth in its first branch. From attacks of pain occupation and expansive delirium for one-fourth and one-half hour several times a day for eight weeks.

A case observed by Anton (Wiener klin. Wochenschrift 1889, 12) and reported in his paper "Ueber Beziehungen der Neuralgie zu den Psychosen" of painful concurrent ideas produced by a supraorbital neuralgia might be added.

Kl., 23, single, lawyer, of a very tainted family, once rachitic, has developed well, had gotten into political complications and in prison, where tormenting headache occurred. In the fourth month of imprisonment attacks of "unconsciousness" for twenty minutes with shrill laughter. Subsequently, after discharge, states of fear with *taedium vitae*.

Just prior to admission to the psychiatric clinic in Vienna on October 3rd, 1888, owing to a serious mental condition, which had followed a faint, repeated attacks of three and four days duration of unconscious acts, talking, laughing, crying had occurred.

At the clinic psychical depression, fear, *taedium vitae*, marked hyperesthesia and periodical neuralgia in the supraorbital nerves.

In the exacerbations of the neuralgia first a feeling of dizziness, mental incapacity, confusion, then ideas of pain-

ful import, which turns on unpleasant reproductions, but also adverse, even hostile relations to those about and the world.

Attacks especially after affect and relative mental stress. Marked improvement from faradic treatment of the diseased nerve areas.

The following cases of my own observation may illustrate the heterogeneous neuralgic psychotic clinical types as to difference in pathogenesis.

The first is a dysphrenia in the sense of Griesinger's qua concurrent ideas, the second a hallucinatory delirium with amnesia, the third evidently a vasomotor reflex psychosis, a transition case to the epileptic group, but without evidence of this neurosis.

Case 2. Louis M., 10 years old, mother hysterical, weakly, of neuropathic constitution, anemic, reduced in nutrition from rapid growth and forced education, has been periodically depressed for past four months, anxious and in tears complained that such horribly nasty names and general thoughts came into his mind, which he could scarcely refrain from uttering. This condition occurred daily, lasted several hours and was accompanied by intense boring pain in the left breast and a globus-like feeling.

When the pain returned so did the evil thoughts immediately.

When free from pain the boy was cheerful and well, yet of late he has thought about the evil ideas and began to regard them as sinful or even supernatural.

A careful examination revealed a nervous state, anemia, neuroses, masturbation could be excluded.

The tract of the 1st, 4th, 8th, 9th intercostal nerves was painful on pressure.

Forcible pressure on the sensitive neuralgic nerve tracts makes the boy anxious, whining and immediately produces the disagreeable thoughts. A suitable general and local treatment effected a recovery after several months.

Case 3. Marie S., servant, 17, was admitted to my clinic May 28th, 1896.

The police surgeon's report shows that S. has given

satisfaction in her last place for eight days, became excited the last night, cried, wept, rolled about the floor, talked disconnectedly, among other things of her prior mistress, who had been unreasonably jealous of her, forced herself into her room with a knife at night and she had insulted H.

Patient is disturbed whining, scarcely to be induced to talk, claims to have been stabbed in the head with a knife, that there is a team of horses in her brain.

She has no fever or vegetative disturbance. Cranial circumference 52. She complains of severe headache. Whole trigeminal as well as occipital tract, particularly the right, very painful on pressure and the site of spontaneous pains. No stigmata hysteriae.

Left to herself she broods, is wholly disoriented as to her position, does not care where she is, unconcerned as to what goes on about her, temporarily she is entirely reactionless, still without being stuporous.

She gives the impression of being wholly absorbed in thought. Now and then assertions that she is being constantly insulted by her previous jealous mistress. "She gives me no peace."

She complains that a certain woman causes the pains by jabbing a knife into her head. The nights are quiet and generally spent sleeping.

On June 2nd, with abatement of the headache, she became more rational, freer, but felt that a knife was stuck into her head and complained until the fourth afternoon of knife jabs and that the woman kept up her insults.

She then became perfectly lucid and stated that from March 26th, 1896, she had to suffer a great deal in her former place from the jealousy of her mistress. On May 13th she had finally left the place, owing to the ever worse recurrence of the jealousy, to take another in the vicinity.

As often as she met her former mistress she had been insulted. She said she could no longer bear the trouble from this injustice and infamous attacks on her honor.

On May 25th a very painful scene occurred on the street. From the affect thus induced she had violent headache, loss of appetite and insomnia.

The night of May 28th she had spent ironing, owing to her insomnia. From headache and crying she could not work after half past eleven. She sat down? Of what happened from then until June 4th, when she found herself in the hospital, she is entirely ignorant.

She still had some headache, but which passed away within a few days, presented no variations physically or mentally, no longer manifested any affect in remembering the injuries done her by her former mistress.

On June 10th, when told her father had come, she presented her former condition.

She seemed disturbed by the visit, dreamy, did not recognize her surroundings, nor her father, had headache, winched on pressure to the right side of the head, gaze fixed, manifested no delirium and after about four hours came to herself with amnesia for this period.

On June 17th, after being well in the interval, neuralgic headache, claimed the woman has stabbed a knife in her head. The dreamy state (Dämmerzustand) more profound than before. No hallucinations of hearing.

June 21st again lucid. From then on until discharge (June 29th) violent headache daily, but without psychopathic symptoms.

It was learned from her father that there was no hereditary taint, that his daughter had been very emotional from childhood, cried readily, often had headache and in 1895 from a box on the ear by her mistress she had been very sick and confused as at this time, so that she had to spend three weeks in the hospital at Pressburg.

She has never had a trauma capitis.

Anamnestic and present inquiries as to epilepsy and hysteria were entirely negative.

Case 4. Miss Rov—, 26, teacher, admitted to my clinic October 11th, 1874, of healthy parents. One sister nervous.

Patient was well as a child, had chlorosis at 17, menstruated at 20. Frenzy with nymphomaniac symptoms for five months in her twenty-fourth year. Complete recovery. At the end of August, 1874, became ill from shock (father

injured on the railroad)—cardialgia, feeling of pressure in the epigastrium, depressed, great emotional irritability. The epigastric trouble ceased in three weeks, only the headache, restless sleep, bad dreams and praecordial fear remained.

From October 20th, 1874, temporal and intercostal neuralgia with psychical depression, desire to be alone, aversion for work.

The neuralgia was constant with exacerbations. Attacks of the following character occurred with them:

As the temporal pain increased the patient became pale, faint. She comes to herself in a few minutes: she whines, complains of intense temporal pain on the left side. The face is then suffused. Occasionally several such attacks occur in a day, to which the temporal neuralgia seems to be an aura. A circumscribed point above and external to the upper border of the left orbit is found to be the site of the pain. It is very sensitive to pressure and experimental attacks may be produced from this point. The pain does not radiate.

No tissue or bone changes are found at this site. The first branch of the trigeminus is everywhere sensitive to pressure. The attacks are never accompanied by nausea, scotoma, etc. Fundus negative. The left ear is extremely hyperesthetic, the ticking of a watch even being painful. Stigmata hysteriae are not discoverable.

Beside the temporal there is an intercostal neuralgia on the left side, which exacerbates with the first, but has no influence on the occurrence of the attacks.

The vegetative organs functionate normally. Uterus virginal. Pressure on vaginal portion painful. Prescribed cold friction, lukewarm baths, tonics, morphine injections *ad locum dolentem*.

The symptoms of dysthymia disappeared in a few weeks. The local symptoms and attacks continue.

These occur once or twice daily, last about half an hour, attended by complete loss of consciousness, which does not occur suddenly, but gradually. She grasps at the painful temporal and intercostal region, covers it, trembles

violently when pressure is made on the former. Jactation, throws herself about, strikes, which appear like unconscious reaction to intense pain. At the height of the attack she often groans, tremor-like twitching of the lower extremities, similar to a rigor, clawing at the pillows, grinding the teeth and rotation of the eyes upward occur. Frequently there are traces of delirium—disconnected, incoherent words, conversations with her brother.

Respiration and circulation undisturbed, but pulse small and frequent. She quickly comes to herself again after the attack, without vertigo, but is faint and exhausted. No urina spastica.

Menses regular, of no influence on the attacks.

She has been well psychically since January 1875. The temporal neuralgia is manifested here as an aura. Between the attacks there is no more pain on pressure. The intercostal neuralgia has become more prominent. It is unable to induce the attacks, but exacerbates with them and is especially intense afterwards. The attacks became more rare, not induced by psychical irritation, only by the intercostal neuralgia. Under bromide treatment (6,0 pro die) and continuance of the morphine injections (0,03 twice daily) until May the attacks became very rare.

As no attacks were observed in September and October and the disease being limited to a slight temporal sensitiveness and nervous excitability, Miss R. was discharged November 9th, 1895. The recovery has been maintained.

The connection between neuralgia and transitory psychosis most frequently consists of an epileptic or hysterical change being present in the central nervous system and the neuralgia is simply the aura of a seizure of one of these two nervous diseases. If merely a psychical seizure occurs, as is quite common in epilepsy as an equivalent of a convulsion, in hysteria gravis as a rudimentary attack (*période de délire*), a neuralgic transitory insanity occurs, which is only clear when the neuralgia is recognized in its true import.

It is even probable that in the neuralgic aura of an epileptic seizure it may end there or be abortive in so far

as only clouding of consciousness and several symptoms of the otherwise classical convulsive attack accompany the neuralgia, respectively mark the epileptic seizure. The whole then gains the stamp of a neuralgic equivalent of the ordinary seizure.

If a neuralgia on a hysterical basis induces transitory insanity, this always happens in the way, that the neuralgic area acquires the import of a spasmogenic zone and thus excites the attack, which may be limited to the *période de délire*.

An interpretation in the sense of an epileptic equivalent seems to me justified in the following case reported by Anton.

K., 18, book-keeper, mother tainted, gifted, nervous, afflicted with frontal headache since early boyhood.

At sixteen, in connection with his mother's death, unconscious collapse, followed by excitement, confusion, senseless violence, biting, grinding the teeth. Such attacks repeatedly. Since then irritable, the tormenting headache aggravated.

In July, 1888, suicidal attempt in the Danube with amnesia.

Since then a grudge against his chief, ideas of being revenged on him.

On August 2nd entered his office for this purpose, attack of furor with amnesia. At the clinic exhausted, disoriented, himself again after four days.

Second admission to the clinic September 15th, 1888, with marked hyperesthesia of supraorbital nerve. Patient exhausted, confused, is Dr. Faust, 300 years old, has been through the Thirty Years War, etc.

Patient actually romances, talks of his delusions freely, otherwise very reticent, amnestic for vitæ anteactæ, previous admission to the clinic. Rapid recovery from the psychical condition after two days, with complete amnesia for the time from September 9th to 17th.

His writing is entirely different from that he did as Dr. Faust.

On the 17th the supraorbital nerve still painful. The neuralgia abated.

Patient seems easily fatigued psychically, still nervous, excitable, depressed as before.

While at the hospital two attacks of furor of about ten minutes duration due to emotion, analogous to that on August 2nd, each time with exacerbation of the neuralgia.

The two following cases observed many years ago may be cited as types of the clinical pictures of neuralgic epileptic and hysterical transitory insanity.

Case 5. *Epilepsia larvata in form of vesania neuralgica transitoria.**

In the following case it is a matter of hallucinations and delirium occurring periodically with an intercostal neuralgia in a girl formerly subject to epileptic attacks (*dys-thymia neuralgica epileptica*), which have gradually taken the place of the latter and from the peculiar psychical picture of the paroxysmal and intraparoxysmal symptoms may be referred with certainty to the fundamental cause (*epilepsy*). At the same time clinical observation has succeeded in tracing the individual paroxysms to the peripheral cause (*neuralgia*), and attention to their reflex excitement had a favorable therapeutic result in the way of a relief of the pathological condition by subcutaneous injection of morphine, which also afforded experimental evidence of the etiological connection of the individual symptoms with the reflex excitement of the paroxysm. The importance and difficulty of an expert opinion in such conditions occur from a theft, which the patient committed during an attack of her trouble, causing the court to call for an opinion as to her sanity at the time of the act.

Wilhelmine W—, 33, Catholic, single, servant, later laborer and vagabond, was transferred July 10th, 1866, for the purpose of treatment and observation of her mental condition, from the detention prison to the asylum at Illenau, where she had been since May 15th for a theft of linen committed April 26th, 1865, and she had become insane.

The official record of the previous life of W. gives the following statements: The crime, for which she was arrested,

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was a theft of linen committed on the night of April 26th between one and two o'clock at the bleaching place in R. immediately after the theft she had hastened away with her booty, wandered about in different villages for many days, disposed of a part of the stolen things and with the remainder went to her mother on May 1st and told that she had been given the linen by a family with whom she had been. When arrested on May 15th a part of the stolen things were found, as well as some stolen before, the balance the mother and daughter had sold or used up.

The accused confessed frankly and was confined for a time in the detention department of the jail.

In the early part of her imprisonment, from which marked anemia, oedema of the feet and constipation soon occurred, significant anxious restlessness made its appearance nearly every evening; she claimed that at night a large black man, with documents under his arm, came into her cell, sat on her bunk and gazed at her. The nights were sleepless, restless; during the day time she was quiet. In spite of being changed to the general prison, increasing restlessness, silly efforts to escape, *tædium vitae* occurred from July 5th, so that the prison physician asked for her removal to the insane asylum, which was effected on July 10th.

On admission we found a strongly built person, but very much run down and extremely anemic. Skull somewhat dolichocephalic, symmetrical; indifferent, often stupid facial expression, sluggish imitation, sluggish movements, but no disorder of the motor apparatus. No disease of the vegetative organs, yet well advanced anemia essentially pronounced in weak circulation, waxy, somewhat sallow skin, oedema of the feet, besides leucorrhœa.

A number of nerve tracts, but especially the whole course of the eighth left intercostal, were very sensitive to pressure, so that pressure on the pain points of these nerves (Vallaix) produced a peculiar anxious excitement and irritability in the patient and she would ask if she should tell the story of the "black man." Psychically there was found a high degree of weakness of memory and stupidity,

so that she was unable to give any information as to very simple facts of her former life, and an anamnestic investigation of them was impossible. Like the whole manner and imitation the tardy answers to wholly concrete questions betrayed a marked enfeeblement of the psychical mechanism, which was further expressed in the childish manner, great proneness to cry and irritability. She frankly confessed the theft when questioned, but immediately claimed, crying and moaning, she was innocent, a black man, whom she saw before and now in prison, had told her to take the linen; she had not been able to resist, also thought nothing further about it. Several days before and more often earlier her head had felt so peculiar; she has often felt a pounding in it, when it seemed as though a whole multitude of people shouted at her. When this happened she must get away; she often wandered about aimlessly for days. This had occurred every few weeks. After the theft she had done so for three days and nights, she had been able to do nothing but run and had a feeling in her head and heart as if she must take everything she saw. She adheres to the reality of the phantom; the memory of it makes her very uneasy; could it not have been the devil and was she not lost? Then by her silly crying, moaning and painful thoughts wholly uncontrollable, she showed she was in the power of the demoniac idea.

During the following weeks this picture of imbecility with childish irritability and marked anemia changed but little. An opinion desired soon after admission could only be provisional from want of all anamnestic data and the brevity of the period of observation; it is evident that a state of imbecility exists, the anemia apparently due to the long periods of insufficient nourishment, and it was assumed that owing to the advanced state of the disease on admission, the mental disorder had been present before, probably at the time of the theft. Patient is in a condition in which she can offer no resistance to the hallucinations, neither then or now recognized as such, which incited her to the act. On this provisional opinion the examination was postponed and the patient left in the asylum, where by con-

tinued observation and careful investigation of the anamnesis we were finally able to discover the connection of the symptoms with the pathogenesis and, on this basis, institute a successful treatment.

Until the beginning of November the weakness of memory and intellect already mentioned, great emotional irritability, periodical depression, vague feelings of fear, now and then complaints of intercostal neuralgia formed the chief psychical and somatic symptoms, when on the 18th a violent paroxysm occurred, which made the comprehension of the case very easy. The patient, in whom nothing peculiar had been noticed except a certain agitation and greater irritability, suddenly cried out, ran away and was found by the nurses lying on the ground in a desperate struggle with a terrible vision. Her head was burning hot and red, expression wild, face distorted; the patient suddenly attacked those about, bit, kicked, struck with all her might, so that restraint was necessary. Put in bed the violence and furor continued for ten minutes, she then became quiet, began to appreciate her surroundings, came to herself quickly, yet was very irritable, greatly confused, depressed and had painful thoughts, that God had forsaken her, for several hours and then passed into the *status quo ante*. It was shown that she had no consciousness of what had transpired during the attack, yet she could give quite a good account of the events in her somnolency.

With the pounding in her head, a thrill through her body, a fearful anxiety came over her. A black man with long ears, long beard and hoofs stood before her, demanded her eternal salvation, ordered her to strike everyone. He had stabbed her in the heart, struck and burned her side. She could not comprehend how he had gotten through the door, but it must be really so, for she had seen, felt and heard him. This condition of a transitory delirium, which is isolated in the whole course of the disease, still more the patient's statements, that she has been burned, stabbed in the side, etc., which indicates some painful sensation at the place, the fact that the intercostal neuralgia had been previously observed at this place, with whose exacerbations

states of psychical depression, irritability or temporary appearance of the hallucinatory figure of the black man had occurred, must awaken the suspicion that we have a dys-thymia neuralgica, a reflex psychosis, which is due to a peripheral irritation, perhaps to the intercostal neuralgia already proven.

The presumption could soon be confirmed, for on the 30th we were called in due time to another attack, so the presence of an extremely violent neuralgia of the 8th left intercostal could be proved. This time the attack lasted longer, about half an hour, but otherwise the same as the previous one. Pressure on the neuralgic area aggravated it intensely and immediately led to the recurrence of the idea that the phantom stabbed her in the heart. When the attack ceased the neuralgia had also disappeared. The diagnosis was no longer to be questioned; *we had a dys-thymia neuralgica, which, according to the intensity of the pain, was manifested either as mere psychical depression, temporary hallucination, or torpid delirium, whose several delusions drew their material from the neuralgic area, and were, so to speak, merely the allegorical interpretation of the pain perceived in the dream state.* Such attacks occurred on December 4th, 8th, 23rd, January 4th and 23rd. Pounding in the head, a thrill through the whole body, hot, congested head, bewildered expression betraying intense fear, great irritability, gruff, violent talk, restless running about, sudden violence to those about were regularly the prodromi of the attacks, which occurred suddenly, were alike in detail, lasted from ten minutes to half an hour and left only a memory of what transpired in the dream state. Intense headache, great weakness, irritability, stupidity for several hours, when the patient again returned to her previous condition. A knowledge of the connection of the symptoms indicated simplified the treatment. The neuralgia was treated and benefited by subcutaneous injections of morphine (0,01—0,03 twice daily at the pain point), the nurses instructed to call the physician immediately on the slightest prodromal symptom; the attacks were checked by stronger injections, the anemia benefited by iron and diet, finally the

neuralgia was relieved by the continued employment of the injections,* when the attacks ceased, the weakness of the intellect and memory improved, the irritability, depression and hallucinations disappeared and in May 1866 the patient could be discharged and, from reports up to June 1867, has had no return of the former symptoms of her trouble.

In this case we evidently had a neuralgic psychosis, and so far it was clear. But not so clear is the pathological state of the central organ, the conditions in it by which a peripheral irritation can cause excitement in an inaccessible nervous area. Were the conditions of this morbid brain state to be sought simply in the faulty brain nutrition, the extreme anemia, or did another central neurosis exist, whose symptomatic expression, perhaps in a changed form, which in the patient were the attacks observed and of which the neuralgic phenomena were only a symptom? Two neuroses could be thought of here: hysterical and epileptic conditions. To say nothing of the anamnesis obtained in the meantime, neither the form of the attacks nor the psychical condition in the interval speak for hysteria, but afford strong presumptions that an epileptic trouble exists. This is again indicated by the great weakness of memory, great irritability and periodical psychical depression of the patient, her very abruptly occurring hallucinations of terrifying contents, the sort of attacks, their uniformity, which vary only in intensity, the delirium and hallucinations with their terrifying contents, their sudden occurrence, the amnesia for all that transpires during them, the transition to the former *status quo* through a stage of stupor and confusion. If all these may be recognized as the characteristic traits of an epileptic disorder, the assumption gains certainty when the patient once suddenly fell from her chair and had epileptic vertigo for several seconds. She cut her cheek by falling out of bed one morning in a dazed, irritated condition, without being able to tell how it happened. The

*It is peculiar that while 0.015 of morphine subcutaneously caused vomiting, 0.06 injected during the attack produced no toxic symptoms, so the nervous system at that time must be in an entirely different condition. It was also possible to check the attack if the injection was given in the prodromal stage; in the attack the injection had no effect.

anamnesis, which had gradually become possible with the progressive improvement in the psychical condition and completed by the statements of the mother, perfected the evidence that it was a matter of a purely reflex epilepsy, whose convulsive paroxysms were represented by peculiar neuropsychical attacks, analogous to the epileptico-manic, and must be regarded as equivalents of the former, as transformed evidences of one and the same fundamental state.

The anamnestic factors were as follows:

W. W. is subject to no demonstrable predisposition to psychoses; a sister has epileptic convulsions. W. was very sickly in childhood and had left intercostal neuralgia from her tenth year, in whose exacerbations she then was often anxious, depressed, complained of a pressure over her heart, ran about aimlessly, often in the middle of the night, and without knowing what she had done or where she had been when she returned after hours or days.

In her eleventh year she had convulsions, which she characteristically describes, when she was considered dead, during the attacks of intercostal neuralgia. She generally had violent clonic convulsions; consciousness was lost completely, often frothed at the mouth, unquestionable epileptic seizures, which occurred often, particularly at the time of her menses, and affected the patient until her fifteenth year.

Her menses began at thirteen and one-half years of age accompanied by pain and afterwards were very irregular and painful. From puberty the patient seems to have had chlorosis for many years. But the attacks of neuralgia did not cease with the convulsions. The hallucinations replaced them with the exacerbations of the neuralgia. The same demoniac phantom, which played so large a role in the later course of the disease, appeared at intervals of four and one-half weeks, spit fire at her, struck her (at the site of the neuralgia) with two large, black wings, commanded her to steal and do this and that, and if she did not immediately obey, she was jeered at and followed.

These horrible visions were generally accompanied by the feeling of roaring and pounding in her head. When she closed her eyes the phantom, which she had formerly rec-

ognized as a vision of the devil, became more vivid. When the attack reached its climax, it gave her no choice but to run here and there aimlessly from a blind impulse. The "evil one" then followed her for hours, bid her to take things she saw, to strike, etc. If she obeyed, she at once felt better. She had no clear consciousness of her surroundings during these attacks; she did not know people whom she met. When, after hours or days, she came home exhausted, she did not know where she had been, nor where she had gotten the things she had. These attacks had occurred every few weeks since her fifteenth year, only not so pronounced as those observed in the asylum. They were essentially alike in detail, only their intensity varied. Either the vision was only transient, shadowy and gave her a command, which she could not resist, or the phantom was so vivid, the disorder of consciousness so great, that she must blindly obey. She has had to take a great deal at the command of the "black man," thus experienced much trouble and persecution from people, had often been arrested and still known nothing of the thefts and often, after she had come to herself, *even* taken the things back to their owners. It has cost her many tears.

Occasionally the vision does not occur, the neuralgia merely causes great anxiety and restlessness. A feeling of intense oppression at the epigastrium came over her, an impulse to run about and pick up whatever she could get hold of, thoughts that she must strike everyone. In such a condition she had once really demolished furniture where she was working. These conditions generally correspond to mild attacks of the neuralgia; with their aggravation the vision always occurs and with their climax the forbidding delirium described. The anamnesis also shows that the patient in the last few years has often fallen from her chair, collapsed unconscious while in the field at work and has awakened with an intense feeling of misery.

We have little more to append to the clinical description of the case. Evidently it is a matter of different symptom groups of one and the same fundamental condition, namely an epileptic reflex neurosis, which is manifested

either as simple psychical depression with anxiety and destructive impulses, as hallucinatory delirium of a definite sort, as vertigo, or as genuine epileptic convulsive paroxysms. In spite of the heterogeneousness of the clinical picture we plainly recognize in the pathogenesis, course, ever demonstrable peripheral irritation and the peculiar paroxysmal and intraparoxysmal psychical condition the common epileptic basis.

Case 6. Hysterical insanity occurring after an injury to the head.*

Elizabeth H., single, born February 17th, 1838, was brought to the asylum at Illenau in March 1864 owing to a severe nervous trouble, with which she had been afflicted since April 1861.

She had no hereditary disposition to neuroses or psychoses, developed well physically and mentally and never has had any menstrual disorder. The anamnesis just as little any special tendency to nervous disorders as a predominance of the sensory and emotional functions over the others. Also all phenomena, which could have indicated peculiarities of character, were absent; active, moral, good natured. The patient has spent her life at needlework and managing the household affairs of her parents.

On April 4th, 1861, she was severely assaulted while out in one of her father's fields by a neighbor, who, without any cause, except an altercation, struck her a violent blow on the left parietal region with his fist. She fell to the ground, got up soon but with a marked vertigo and headache. No other injuries from the assault were found; H. went home, but soon felt so badly that she must go to bed. She was greatly excited over the wrong done her, "tormenting pain appeared at the place she had been struck, so that she could not bear anything on her head." A number of circumstances, which then acted on the patient, served to increase her excitement: first the example of a woman in the vicinity who had pains and convulsions in consequence of a similar assault, further the examina-

*Friedreich's Blätter und Gerichtl Med., 1866.

tions of the court physicians and the legal proceedings, in which she was involved by the process commenced against the neighbor. The headache, which later developed to an extremely violent cervico-occipital neuralgia of the left side, became very troublesome; sensations, as though the skull would burst at the site of the trauma, irradiated sensations to the other sensory branches of the trigeminus, vertigo, restlessness, rigors, thirst, disturbed sleep were associated, so that the patient usually kept her bed and was under medical care.

With temporary improvement of the symptoms to April 16th (13th-16th) this condition continued, whose prominent symptoms were a very severe headache, various nervous troubles and slight fever. The headache was extremely troublesome, felt especially on the left side, but often irradiated to other areas of the trigeminus and prevented the patient from doing any steady work. On the 16th during its exacerbation a tetanic spasm lasting half an hour occurred, on the 17th violent tonic and clonic convulsions, during which the patient's consciousness was clouded and the prick of a pin was not felt. These attacks, which then recurred almost daily for a month, ever more had the stamp of hysterical seizures, they took on a polymorphic character, affected first this, then that group of muscles, varied greatly in intensity and extent, first more of clonic, then more tonic nature; they were often foretold by the patient. The consciousness, at first only clouded, subsequently was completely lost during the attacks, so that the patient had no memory of what transpired during them, but occasionally attacks occurred, in which the consciousness was unaffected. It is to be noted that then an exacerbation of the headache ushered in the attacks and their violence approximately correspond to its intensity, an attribute, which was well observed during the patient's stay at the asylum. In the Fall of 1861 the spastic symptoms became more rare, but the type of the neurosis became more complex, in that the psychical and sensorial functions were implicated in the disease process. The physician's report notes confusion of the ideas, religious delirium, ecstatic states, frantic outcries,

automatic acts, states of (hysterical) coma, (the so-called "silent convulsions" of patients), etc. In the so-called intervals the patient is relatively well, only capable of the lightest occupation, but the headache ever hangs over her like Damocle's sword, whose exacerbations induce the attacks. The notes of the court physician state that the site of this pain is observed to be exactly in the same place as here, namely the left parietal bone (February 1862). Only non-essential disorders of the other functions of the body were observed during this period; menstruation was regular, only the attacks increased while it lasted; the intestinal action is somewhat sluggish, sleep quiet, except when interrupted by the attacks; signs indicating a cerebral focal disease, like palsies, etc. are not observed; the pupils generally react sluggishly and are usually contracted. As the convulsions have the evident stamp of hysterical paroxysms, certain attributes of the psychical life, sudden alternation for no cause from marked depression to the feeling of extreme well being and the most cheerful views of life, also point to the hysterical nature of the trouble. A clearer connection is found between headache and disposition, which is still more plainly shown during her stay at Illenau, namely a greater depression of the feelings always appeared with exacerbations of the headache and periods of cheerful disposition coincided with its remissions.

In the spring of 1862 the headache and the attacks became less frequent, but in the winter of 1862-3 returned more violently and somewhat changed in their character, in that the convulsive muscular disorder became less prominent and represented more the picture of chorea major with periodical delirium and hallucinations, whose subject was the matter of the assault. They maintained this stamp subsequently; consciousness of what transpired during the attacks was always absent, and these returned at intervals of fourteen days to a few weeks, the patient began a series of very confused actions, *e. g.*, ran here and there, out to the forest and fields, in her delirium mistook persons she met, in that she considered them supposed pursuers and thus developed extraordinary regardlessness, agility and muscular

strength. In the intervals, save a depressed disposition, the patient had no psychical disorder, but suffered much from the constant headache, which almost always prevented her from working. A permanent improvement of the trouble was sought for in vain from repeated bleedings, blisters, issues, setons in the neck, quinine, morphine, etc., etc. It is to be noted that the visual axes gradually assumed a permanent convergent direction.

The examination of the patient on her admission to the asylum in March 1864 presented the following condition: she is of medium size, strongly built, well nourished; the skull is regular, the visual axes some what convergent; no motor disorders, no disorder of the functions of the vegetative organs; menses regular. Examination of the place where she had been struck showed no pathological changes the bone or tissues covering it, while the entire left occipital nerve in all its branches was hyperesthetic and pressure in its course caused intense pain through its whole tract, for a long time the patient has been unable to bear the least weight on her head without immediately being attacked with severe neuralgia. The parietal point especially sensitive was where the left parietal bone unites with its fellow and the occipital bone; this point is about a quarter of an inch in extent; a second was found in the course of the occipital nerve behind the mastoid process (occipital point). The intensity of the neuralgia varied. The patient was never entirely free from pain and inexhaustible in her description of the feelings she had in her head; she either complained of cold, shivering, burning, throbbing, twitching, stabbing, a feeling as though her head would burst, wind blowing through a crack on her ear (corresponding to the course of the occipital nerve), water ran back and forth between the skull and scalp, etc. Other disorders of sensation were absent, especially contingent muscular hyperesthesia; the higher senses were somewhat hyperesthetic, hallucinations on admission not to be demonstrated. The mental state was dull, depressed, painful; the patient's senses and fancy were especially engaged with her trouble, directed to her painful sensations and in the

memory of her assault, solicitude about her life's happiness, her health. She was pleased when she could divert the physician's attention and others' sympathy to herself, for the least doubt as to the gravity of her disease or only the abatement of others' interest immediately caused a very depressed mood. In general this was dependent on the existing intensity of the neuralgia, a dependence, which was very plainly illustrated later. This habitual depression, the mental impulse, in which the ideas were confined by the painful feeling, the desire observed in all these patients to excite others' interest and sympathy, even if necessary by half voluntary exaggeration of the disease symptoms, an increased susceptibility to mental impressions, corresponding to the hyperesthesia in the neuralgic area, were the most marked psychical anomalies, which were met with on the patient's admission. In the early days of her residence the disease type was completed by the occurrence of spasmodic attacks, which continually recurred every few days or weeks. They were always due to violent exacerbations of the cervico-occipital neuralgia and had as more remote causes almost exclusively psychical factors. It was either abatement of interest in her sickness on the part of those about, suspension of the physician's attention, unpleasant meetings with the other inmates, disturbance of rest or convulsive attacks of the other patients which in the intense psychical excitability caused the attacks, or it was morbid irritations directly producing the neuralgia, like blows on the head, exposure to greater heat by sitting in the sun with uncovered head, which induced motor phenomena in the extreme spinal reflex excitability; for a time irradiations of other neuralgic troubles to the locus minores resistentiae in temporarily intensely increased reflex excitability, unpleasant odors, intense sense impressions or even mental irritation, *e. g.*, the vivid reproduction of the occurrence in the field, subsequently increased to a hallucination, by which she had been made miserable, sufficed to produce, by recurrence of the neuralgia, spasmodyc and hallucinatory phenomena. The connection indicated between disposition, neuralgia and attack might be more plainly demonstrated: if the neuralgia

exacerbated the disposition passed from its state of relative equilibrium to that of depression, and it was but a step to the attack; but all that affected the emotions unpleasantly, was suitable to immediately induce the neuralgia—a condition, which, as the trouble increased, subjected the patient irresistibly to this morbid impulse. As all these causative factors acted almost exclusively during the day, it is comprehensible that the patient was free from her attacks at night. It is hard to project a type for it, for first this, then that function was involved and the phenomena of disordered nervous action vary greatly in their intensity.

With increasing pains in the occipital nerve and their irradiation to branches of the fifth and cervical nerves, indications of globus caused the patient continually increasing restlessness and anxiety, which were either located at the sight of the neuralgia or the epigastrium; the bulbi were distorted, the strabismus convergens increased, marked vascular paralysis in the area of the nerves affected occurred, a symptom, which generally accompanied the more intense periods of the neuralgia, if an attack did not occur. Consciousness was clouded, the patient was aware that her thoughts were confused, "all was topsy-turvy in her head," talked incoherently, mistook those about and made silly, disconnected replies to questions; consciousness of the objective world was completely extinct, her face had a grotesque expression and was convulsively distorted in every way, the vision of the man who had struck her, made its appearance, he pursued her, threatened to strike her, she felt the blows, in that in her disordered consciousness she misinterpreted the pains due to the neuralgia. These were so violent that even in the wholly absent sense perception pressure on the pain points was felt and the attack immediately aggravated. A desperate struggle with the hallucinatory form now ensued, in which the patient displayed an increditable agility and muscular strength; she heard her assailant scold, jeer, threaten and exhausted herself in endless vociferations; she leaped upon the furniture, over the bed with remarkable dexterity in trying to get away from him, until finally these muscular actions bearing the stamp

of voluntary movements became poorly coordinated; similar to the movements of chorea magna or instead of these or in connection with them general clonic convulsions appeared, interrupted temporarily by tetanic rigidity of the extremities. The delirium then continued sometime; gradually, after a soporous condition of twenty minutes to half an hour, the patient then became conscious of the objective world rather quickly, complained of violent occipital pain, general exhaustion, talked confusedly for some time, presented a clouded consciousness and then became herself again as the pains abated. Memory of what transpired during the attack was entirely absent.

The whole psychical, sensory and motor sphere was not always affected sympathetically. Without an assignable reason incomplete attacks occasionally occurred, which consisted either of hallucinatory delirium or convulsions similar to chorea magna or hystero-epilepsy.

The treatment (quinine, morphine, chloroform, atropine, nitrate of silver with extract of aconite, warm baths, traitement moral) was of no avail.

In January, 1865, it was decided to employ induction electricity and a strong cutaneous faradization of the parietal pain point was given twice a day and an intense induction current passed through the occipital nerve for ten minutes. The result was surprising; after the first sitting the patient bore strong pressure at the pain points, the attacks became more rare, the disposition more cheerful, the neuralgia ceased for hours and was much less severe. But unfortunately it returned on the least emotion, the faradization became troublesome and was changed to subcutaneous injections of morphine (1 or 2 grains twice a day at the pain points). The effect was more favorable than that of electricity; the condition improved so that subcutaneous injections of water were given for several weeks in August without the patient's knowledge and had the same effect on the neuralgia. But not so with the restlessness, anxiety, irritability, which had disappeared so long as she was under the effect of large doses of morphine; the sudden withdrawal of the habitual nerve stimulant produced these

again, insomnia also appeared and consequently the morphine treatment had to be resumed. The favorable effect on the general condition was not wanting, and in consequence of the subcutaneous injections a large abscess of the scalp had occurred in August at the site of the neuralgia. The neuralgia was entirely absent for a time, only returned rarely and feebly and the patient seemed to be convalescent.

But still in August a violent intercostal neuralgia appeared on the left side at the height of the second rib, after migratory neuralgic troubles in the various intercostal nerves having shown themselves. It is remarkable that the new neuralgia took the place of the other in respect to the genesis of the attacks and the patient's disposition. The former again occurred in exactly the old way, as soon as the intercostal neuralgia exacerbated and was accompanied by globus and feelings of anxiety, but without muscular hyperesthesia being found in the gastric region. The neuralgia yielded to treatment by subcutaneous injections of morphine, which must be increased to six grains *pro die*. Under the influence of these large doses the exaggerated reflex excitability of the nervous system was unmistakably lessened finally, so that the etiological factors above referred to were no longer so readily capable of producing the attacks; in spite of the continuance of the moderated neuralgia, and the patient was able to control herself by the regained force of will. But the morphine, which seemed to produce a very quieting effect, an agreeable disposition and general feeling, was an essential stimulant and breaking it off was hard, the effort causing the patient pain, abatement in her struggle and even self-control, when spasmodic attacks would appear. But by gradually lessening the dose and more rigid psychical treatment of the patient, the habit was finally broken. With respect to the treatment of the incipient attack, it was often possible to check it by chloroform narcosis, faradization or a subcutaneous injection at the site of the neuralgia, an evidence of its reflex origin.

The condition of the patient in the interval depended

almost exclusively on the presence or absence of neuralgia. The painful ideas always ran parallel to the painful feelings. The diminution of the psychical irritability kept pace with lessening of the reflex excitability in other domains of nerve action; the emergence from the narrow and morbid circle of ideas in which the patient was confined, was possible as soon as the morbid restraint was broken, to which the feeling was subjected by the pain. At times when this was very intense, *taedium vitae*, suicidal thoughts, by cutting the throat, etc., visions of the man, who had assaulted her, occurred, but only very transiently. The other branches of the sensory nerves were rarely affected. Once there was a general spinal hyperesthesia for several days, the patient often had nervous aphonia and arthralgia, which appeared and disappeared suddenly, but it is worth noting that when neuralgic troubles were transient they caused depression, but were never able to produce an attack. Mild gastric crises, tendency to constipation, besides *cessatio mensium*, were the only disorders of the vegetative organs we observed from July to November 1865.

The patient essentially improved, *i. e.* was free from her attacks for a long time and her neuralgic trouble became more rare and milder, so that in January, 1866, she went home.

In an effort to become better acquainted with the transitory neuralgic psychosis on an epileptic, or hysterical basis by means of case reported, no slight difficulty is encountered. The great majority of these cases are carelessly observed or faultily reported, as *e. g.* Oppenheim's interesting case (*Archiv f. Psych.* XVI., p. 744), which I might claim to be a case of hysterical as well as of epileptic transitory psychosis.

Most of the older observations are not wholly reliable etiologically.

J. von Wagner ("Trauma, Epilepsie und Geistesstörung," *Jahrb. f. Psych.* VIII., 1, 2) has made a valuable contribution to traumatic psychical epilepsy.

Under citation of casuistics and report of especially pertinent cases of psychical (reflex) epilepsy occurring from

head injuries Wagner emphasizes the fact of the rarity of traumatic reflex epilepsy and concludes that special conditions must be present for its development.

As such he finds: special hereditary or acquired predisposition, brain concussion combined with the trauma, the occurrence of trauma at an early age, trauma of the head (still other parts of the body are not absolutely excluded), lesions of the sensory trigeminal tracts, formations causing pressure or other irritation.

Especially interesting is the author's statement that "psychical" epilepsy is three times more common with traumatic than a non-traumatic cause of this neurosis, as appears from the work of the Prussian Minister of War on diseases of the nervous system in the German army in the war with France. J. von Wagner correctly requires that in every case of recidivous transitory mental disorder of the so-called epilepsy type a careful examination of the body be made for residues of trauma (scars).

Such a scar can then only be regarded as the cause of the trouble, when it is observed to be the starting point of an aura of attacks. Worthy of note, as shown by Wagner, is the great rarity of classical seizures of the neurosis in such reflex epilepsy, but in whose steady symptoms of petit mal are quite often observed. The psychical attacks are almost without exception dreamy (Dämmer) states.

Valuable, likewise forensically well observed cases of transitory psychical epilepsy have been reported by Zierl in Friedreichs Blättern für gerichtl Medicin, 1882, 5, 1883, 2 (Shussverletzung des Arms bei Sedan), 1885, 1 (Verbrechen des Mordes und Raubes Vor 4 Jahren Stichverletzung in die linke Brustseite. Reflexpsychose von epilept. Charakter. Stuporöse und Dämmerzustände). Also the cases I have published (Psychopathia sexualis, 9 Aufl., Beob. 148 and Jahrb. f. Psych. XIV., 3) deserve consideration.

Case 7. Psychical reflex epilepsy.

S., 42, law-clerk, married, had a very irascible father; a sister died from convulsions in childhood, a brother is an imbecile. The patient had scarlatina when a child, from youth to puberty attacks of somnambulism, from then on

had attacks every few weeks of violent cephalgia localized in the forehead. These lasted twenty-four hours and generally were so violent that he was very depressed and weary of life. He was most afflicted in the winter.

Patient served twelve years in the army, felt well except for his attacks of headache.

In 1866 at Verona, without cephalgia, transitory insanity for fourteen hours with amnesia.

He was told that he sprang out of bed in the night and ran out into the yard, where he had stood by the well crazy all the following day.

Later the patient was a conductor on the railroad. In 1870 while unloading a barrel he was struck on the head. He became unconscious, had a lacerated wound along the right coronal suture to the frontal tubercle. Since then the patient has not felt well and capable of work. He had become susceptible to the heat of the sun and alcohol, noticed weakness of memory, particularly for names and numbers, was readily confused by relative mental effort, felt spontaneous pain in the cicatrix of the head wound, especially in stormy weather or from the use of small amounts of alcohol, and in its violent exacerbations often had peculiar attacks of momentary loss of consciousness, much like petit mal, from which he recovered with fixed gaze, inability to direct his eyes and slightly confused. He must vigorously shake his head before he was wholly himself again. For the last few years the patient has earned a small salary as clerk for a lawyer. When he found that S., although willing and industrious was forgetful, often hasty in his work, very peculiarly anxious and with fixed gaze for a moment, he discharged him November 13th, 1877. S. was greatly agitated when he considered his unfortunate financial condition and the illness of his wife. He begged a loan of fifteen florins, went to the telegraph exchange with this money, had a violent pain at the site of the scar and increasing confusion. He now only knew, as in a dream, that everything looked strange to him, soon went away without a reason, sent three florins to his wife by a messenger, drank a glass of beer on his way home. His con-

fusion constantly increased. On the street everything seemed misty, he could not find his way home. From now on amnesia for all that transpired until he came to himself in the hospital on the 17th.

On the afternoon of the 14th he was arrested. While stupid and confused he ran about the streets of Graz listening at the walls. He continually murmured "six per cent and five per cent interest, savings bank, sue them all," then listening and gesticulating. When received at the clinic on the 15th marked disorder of consciousness still. To all questions the patient stereotypedly reiterated the above disconnected words. After a few hours he became somewhat more rational, correctly told who he was, complained of violent headache. He believed he was at home, called to his wife, wanted coffee, continued to repeat "savings bank, six per cent," etc. Patient had no fever, expression is confused, skull normal, beside the right coronal suture, a scar tumid and very painful in the lower part, pupils medium size, react sluggishly. Sleep good. In the evening of the 16th more clear. Patient noticed that he was not at home, but was unable to orient himself. Early on the 17th after a good night's sleep he was lucid. He began to cry about his misfortune that his wife was sick at home. Patient presented no farther psychical disorder. The cicatrix is no longer spontaneously painful and but slightly on pressure. After a few days S. left the clinic, felt so well, under bromide treatment that he did not consider necessary the excision of the scar as advised.

RESEARCH IN COMPARATIVE CYTOLOGY ON THE NERVOUS SYSTEM OF THE VERTEBRATES.

By DR. GIUSEPPE LEVI.

Plate I and II.*

THE comparative method which has given such splendid results in all branches of morphology, not excluding that of the nervous system, has been but slightly applied to cytology. Although cytological researches have been made upon a large amount of material, there are not yet enough conclusions on which to base generalizations, which however, has not yet been attempted.

Therefore I have thought it of some interest in order to understand the morphological value of some of the constituents of the nervous system to undertake a cytological study of the nervous organs of some representatives of all classes of vertebrates, except the birds which are phylogenetically of less importance. As is quite natural, such a research can not be understood without bearing in mind the distinct differences of the various methods of investigation, which distinctions have already been made by Nissl and also in part by Ramony Cajal. Nissl has also proposed a nomenclature for individual types of cells, which however, is not free from criticism and has not been finally adopted.

*Translation of "Ricerche citologiche comparate sulla cellula nervosa dei vertebrati." Rivista di Patologia nervosa e mentale. Vol. 2, p. 193," by Smith Ely Jelliffe, M.D., Ph.D., and Helena Leeming Jelliffe.

To enter at once into the subject, I will begin systematically to set down my observations, describing however, in the cases in which a sufficient number of common characters will so permit me to do, the single cells, not of each animal, but of each class, and will point out the differences which may exist between the species of a single class. I will add that in this description I will confine myself to the most salient facts, and those which are under discussion.

A few words on the technique that I have used. As a fixative I adopted almost exclusively corrosive sublimate, saturated aqueous solution, keeping the specimens in it from 30 minutes to an hour, when I wanted to stain them by the Biondi-Heidenhain method, which gives good results in the study of the nucleus; I used a more prolonged fixation (1-12 hours) when I wanted to stain with thionine, (Nissl, Lenhossek or Delafield's hematoxylin.) I noted, as Fleming, also has observed, that the sublimate gave less constant results and did not easily permit of the study of the delicate fundamental substance of the nerve cell. The length of fixation must vary considerably according to the organ and the animal; while for the medulla and the ganglia of mammals, it is necessary to prolong it from 12 to 24 hours, for the cortex of mammals, the medulla and the ganglia of reptiles and amphibians, fixation should not last for more than 1-2 hours. In some cases I used Herman's fluid as a fixative; this gave good results, but was disadvantageous by reason of its poor penetrating powers, and therefore it gave good results only in the more superficial strata.

MAMMALS.

In this class I studied different nerve areas in the guinea-pig, the dog, the ox, and the bat. My investigations were more incomplete on the rabbit, the rat, the dormouse and the cat. I also made some preparations of the spinal ganglia and of the medulla of man, but not with very satisfactory results, owing to the lack of suitable material.

Spinal ganglia. For the sake of brevity, I will not describe the well known cells of the spinal ganglia, but will confine myself to pointing out the most marked differences

which I found in the various animals. The character of the cytoplasm of the cells of the guinea-pig and of the rat do not differ much from those of the rabbit, which I have described elsewhere.¹

In the guinea-pig and the rat the cells with large clear chromophytic granules, and the small deeply-stained cells, are perhaps a little more numerous, while the large deeply-stained cells are much fewer. The difference in size between one cell and another is not so marked, as in the dog and in the rabbit. The cells of the dormouse vary more than those of the other mammals, they are smaller and the chromophytic granules, at least the great majority, have the form of a nail, a clear outline and are quite crowded; in a fewer number the cells are deeply stained cells with small granules.

In the lightly stained cells of all these animals the granules often lengthen out into fine fibrils not connected with one another. In the cone of origin of the axis cylinder the fibrils often converge, but do not anastomose. Those who wish to look up the structure of the ganglia of the dog, are referred to the description given by Lugaro.²

In the nucleus of the large and medium cells of the guinea-pig, rabbit, rat and cat, the following elements may be distinguished: (Plate I, Fig. 1.) A nuclear membrane and a fine loose reticulum, which becomes tinged by Bondi's stain with fuchsin (acid color); a few acidophil granules; a nucleus formed by an acidophil part, throughout its whole length, and from two to three delicate peripheral semi-lunar, basophil granules, which are stained with methyl green, a very deep blue. In any medium-sized cell (figure 2 represents a smaller cell than those in figure 1, but drawn with a higher ocular) instead of a single large nucleus we see two or three smaller nuclei; these however are composed of an acidophil part and a basophil part, but basophil granules are found here and there.

1 G. Levi, Contribution to the Physiology of the nerve cell, *Riv. di Patologia nervosa e mentale*, vol. I, Feb. 12, 1896.

2 E. Lugaro. Sulle alterazioni delle cellule nervose, etc. *Riv. di Patologia nervosa e mentale*, I, 1899, fascicolo 12.

In general, the larger the size of the nucleus; the longer and the more delicate are the basophil granules (this fact is more evident in the guinea-pig and in the rat), and for the most part, the size of the nucleus is in direct relation to the volume of the cytoplasm. In medium-sized cells in which the nucleus is smaller, the granules are not semi-lunar and laid around the margin of the nucleus, but stick out from it. In the small cells, especially in the guinea-pig and rat, the structure of the nucleus differs somewhat. (Plate I, Fig. 1). We find one or two nuclei formed by two adherent granules, a basophil and an acidophil, the first generally being larger than the second.

I have also been able to demonstrate the same structure in the cells of the dog, and of man, but I did not succeed in obtaining as distinct a figure, because the basophil granule took a pale-blue color; generally the nucleus was much larger and single, and the granules much finer.

Cells of the anterior horn. The structure of the cytoplasm shows no difference in the single cells of this group in the same animal. But marked differences occur in different animals. The chromophytic elements of the central part of the cell are very similar in form and arrangement to those of the large clear cells of the spinal ganglia of the same animal; as for instance, in the guinea-pig, in which the large cells of the spinal ganglia, have a granular structure and an irregular outline, but are large and quite separate one from the other. In the dog the chromophytic substance takes the form of little granules, just as in the large majority of the cells of the spinal ganglia. A similar homology is found in the dormouse in which the granules have a sort of nail shape, and in the ox in which the chromophytic substance is diffused in powdery granules.

The periphery of the cell and the dendrites have a similar structure, common to both, but differing from that of the center, there the chromophilic granules are few, elongated, parallel, with a clear outline; and the largest are slightly fusiform in shape. They show a well marked difference in size in the various animals; in the ox they are large and much longer than in the dog, and in this latter,

longer than in the dormouse and bat. They always lie in the direction of the greater axis of the dendrite. Between the granules there are found in great numbers, short wavy intertwining fibrils which singularly have no well marked direction, but the bundles which they form lie straight along the greater axis of the dendrite, and the same direction is apparent in the peripheral part of the cell near the dendrite. What affinity attracts the fibrils of the exterior portion of the cell to the deeper part, cannot be determined. The transition of the fibrillary zone to the zone rich in chromophil substance in which the fibrils cannot be distinguished is very clear. These fibrils in the two distal portions of the dendrites, where the chromophil granules begin to diminish in size and in number, and also in the smaller dendrites, which sometimes take their origin directly from the body of the cell, become longer, less wavy and almost parallel.

The axis cylinder has its origin in a cone devoid of chromophilic substance, placed in the central part of the cell. While in the cone very many true fibrils appear with scarcely a sign of striation, the axis cylinder is formed, as usual of fibrils that are almost straight and lie parallel. The structure of the nucleus (apart from its greater size) does not differ much from that which is described in the cells of the spinal ganglia. The nucleus is very large, the basophil granules, situated in the outer portions, to the number of three or four are much finer, and are crescent-shaped and not infrequently are joined at the ends. Plate I, Fig. 3.

Cells of the funiculus. The chromophilic granules are for the most part distinctly separate; the fibrils of the cyto-reticulum are not very clear. The nucleus has a nucleolus which is much smaller than in the cells of the anterior horns, but their basophil granules, two to three in number, are larger.

Cells of the substance of Rolando. In the guinea-pig and in the rabbit, the cytoplasm by whatsoever method it is preserved, is scanty, with an indistinct outline, the chromatic part is represented by minute scattered granules. There are no fibrils found. In the bat it is reduced to a

thin border, and in the ox the chromophilic granules are relatively abundant. The nucleus (Plate I, Fig. 6) has a structure which differs considerably from that already described. In the guinea-pig the membrane and the nuclear net-work are acidophilic; but the nucleolus is composed of a large basophil and of a small acidophil granule, which either is simply attached to the first, or surrounds it like a ring. In the dog is seen a small acidophil nucleolus, with two very small pale blue granules at the periphery. In the bat there is no nucleolus, and the nuclear contents are represented by a very delicate blue net-work. On the other hand, in the ox there is a nucleolus similar to that in the cells of the cord, acidophil with two large basophil granules at the circumference.

Purkinje cells. The chromophilic granules (in the cytoplasm) anastomose. In the guinea-pig and in the dog we are able to distinguish fibrils in the large protoplasmic trunk, but not in the perinuclear region. The nucleus has the same characters in the other large cells; the basophil granules of the nucleolus are quite thick.

Golgi cells of the Cerebellum. In the guinea-pig and the ox the cytoplasm has distinct granules, the nucleus has the usual characters of the large cells.

Basket cells. Cytoplasm very scanty. The nucleus in the guinea-pig and in the ox has a basophil granule in the center surrounded by an acidophil ring; in the dormouse, bat and dog, it has a delicate basophil net-work with a very small acidophil nucleolus.

Granules of the Cerebellum. The cytoplasm is reduced to a few granules adhering to the nucleus. The nucleus shows a remarkable variation in structure in the different animals. It is spherical or polygonal. In the guinea-pig (Plate I, Fig. 4) and ox it has a thin acidophil membrane, and in the center a spherical sharply outlined, strongly basophil mass to which some acidophil granules frequently adhere. Sometimes, instead of a large basophil mass, there are two small ones. (Plate I, Fig. 4). In the bat, dormouse, rabbit, dog and rat, the contents consist of a delicate blue net-work, (Plate I, Fig. 5) which extends as far as the

membrane. In the middle of the net-work there may be noticed some more intensely colored blue points, which are nodal points of the net-work.

I ought to make note that in these animals, many of these cells have the appearance of an irregular mass, colored intensely blue. I hold that this appearance cannot be anything but the effect of the shrinking of the granules, due to a defect in technique as they are most frequently found in preparations that have been fixed for a long time in sublimate. In the olives we find cells in which the cytoplasm is not very abundant, with an acidophil nucleolus of medium size, surrounded by two or three thick basophil granules. They are of the type of the cells of the cord.

* *The Giant Pyramidal Cells of the Cortex.* The dog is the only animal in which I have seen granules (in the cytoplasm with a distinct outline). They converge in the principle dendrite, and they become more delicate and elongated in the parts a little higher up than this. In the guinea-pig the chromophil substance is not aggregated in granules, but has a netted appearance. It is all collected around the nucleus, forming a cone with the apex turned towards the origin of the principle dendrite. This latter is composed only of fibrils. These I have been able to demonstrate, in specimens fixed in Hermann's solution, continue into the outer portion of the cell where the chromophil substance is lacking. They end in the chromophilic, perinuclear portion of the cell, where it is no longer possible to distinguish them. In the larger, initial portion of the dendrite, and in the peripheral part of the cell, the fibrils are tortuous, very short, fine and loose, with some of them anastamosing; on the other hand, in the distal portion of the dendrite the fibrils become thicker, more deeply colored, less wavy, more crowded, and longer; (they measure from ten to twenty micra). The nucleus of these elements follows the usual type of the large cells; in the guinea-pig, the two to three basophil granules of the nucleolus are quite marked; but in the dog they are finer and not so easily distinguished.

The large pyramidal cells have the same structure on a

smaller scale only the basophil granules of the nucleolus are thicker. (Plate I, Fig 8).

The medium and small pyramidal cells. The chromophil substance forms a net, which is more closely reticulated than in the large pyramidal cells. In the guinea-pig and in the rat, the medium pyramids have fibrils similar to those just described in the dendrites, which disappear in the perinuclear chromophilic substance. The nucleus differs little from that of the cells of the motor area, and the difference which we notice, concerns neither the membrane nor the reticulum, but the nucleolus, (Plate I, Fig. 7 and 9). In the guinea-pig, this latter has some connection with the *nuclear reticulum* which is denser and more obscure in the center of the nucleus, and always shows an acidophil and a basophil part. The respective relations of these two vary greatly, sometimes an acidophil granule is surrounded by a crescent, (Fig. 9) or there are two basophil granules (Fig. 7). Sometimes in the smaller cells we see a central basophil granule, surrounded by scattered acidophil granules; as in the granules of the cerebellum. In the ox and in the dog on the other hand, the nuclear reticulation is denser; the nucleolus repeats the type of the large cells.

Cells of Cajal (guinea-pig). These cells are in all respects similar to the small pyramidal cells. They are, however, smaller in size.

The large cells of Hippocampus major. They have the same structure as the large pyramidal cells.

Cells of the fascia dentata. They have the characteristics of the small pyramids.

The mitral cells of the olfactory bulb. Cytoplasm with the chromatic part abundant. Nucleus of the type of that in the Purkinje cells.

Granules of the olfactory bulb. In the guinea-pig they are identical with the granules in the cerebellum of the same animals; the same in the bat.

External granules of the retina. They have a nuclear acidophil membrane, which encloses an oval, homogeneous basophil granule, so large that it takes up almost the whole

of the nucleus. Sometimes they contain not only one, but two granules.

Internal granules of the retina. Under this heading are included different elements showing any cytological differentiation which have not been described here. All, however, have a basophil reticulation with some granules in the nodal points.

Ganglion cells of the retina. Cytoplasm with granules, nucleolus small.

Cells of the neuroglia. The cytoplasm is not perfectly distinguished. They have the appearance of small oval nuclei with a basophil membrane on which small nodes are seen on the inner surface and contains a basophil reticulum with swellings. At the nodal points no trace of acidophil substance may be seen. In Fig. 3 (Pl. I) there is a nucleus of an adherent glia cell at the base of the dendrite.

There is some difference between the cells of the grey matter, and those of the white matter. The former are always oval; the latter thicker with an irregular outline and a little smaller.

Cells of the ventricular ependyma. They are larger than the neuroglia. They are shaped like a triangle with the base resting on the *ventricular* surface, a distinct cytoplasm; an oval nucleus, similar in character to the nucleus of neuroglia, but larger.

REPTILES.

In this class I have studied only *Zamenis viridis*, and *Testudo graeca*.

Spinal ganglia. The differences which I have found in the structure of the cytoplasm of these cells in the two specimens which I have described lead me to describe them separately.

In *Zamenis* the great majority of these cells are elongated, only some of the dark cells, which are not very numerous are found here. The nucleus is eccentric; the axis-cylinder rises from the opposite pole.

In the large clear cells, the chromophilic substance appears in the shape of large granules with sharp outlines, spindle or rhombus-shaped. Between the granules there

may be distinguished bundles of fine, wavy, intertwining fibrils, which cannot be followed out for more than 8-10 mm . These fibrils, however, do not lie irregularly. They are concentric to the nucleus in the outer portion of the cell, concentric to a point, which is almost equally distant from the nucleus and from the opposite pole in the other part of the cytoplasm. (Fig. I.)

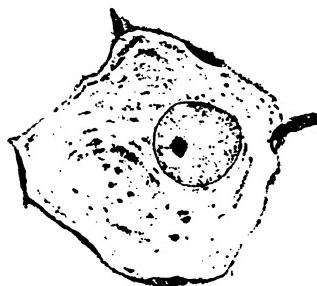


Fig. I. Cell of Spinal ganglion of *Zamenis viridis*.

In this part of the cytoplasm, situated between the nucleus and the opposite pole of the cell, there may be seen a special arrangement of the fibrils and of the chromophil granules which has the appearance of a distinct figure, in the outer part of which no chromophil granules are to be seen, but only fibrils, while in the more central part between the fibrils there are chromophil granules, becoming more numerous as they are nearer to the central point, at which there are always to be found 2 to 4 granules, more intensely colored than the others; and in some cells there are 2 to 3 pigmented masses, whose coloring is easily distinguished from the chromophil granules, because they preserve their yellowish tone, whatever method of staining may have been used. The margin of the nucleus turned toward this figure is concave.

In *Testudo graeca*, one fact concerning the shape of these cells is very surprising. Their outline is irregular, or rather, lobed; and each lobe is joined to the central part of the cell by means of a short bridge, the connective tissue capsule which is somewhat thicker, exactly follows the outline of the cell. Near every one of these constrictions

there are 1 to 2 nuclei belonging to the membrane. (Fig. II.) The dimensions, both of the lobes and of the portion that connects them, vary considerably. Sometimes the bridge is larger than the lobe, and sometimes narrower. The lobe may be as large as the central portion of the cell, but at times it is much smaller. Generally, however, these two parts stand in direct relation to one another as regards size. The lobes generally have the form of a right-angled triangle.



Fig. II. Cell of Spinal Ganglion of *Testudo graeca*.

Any other cells having true lobes are divided in two or three places by indentations of the connective tissue capsule. The nuclei of such may be crowded over until they are close to the nucleus of the cell. I cannot state anything exactly about the number of these lobes. In sections of 5 *mmm* I have counted as many as three; but in thicker sections it was not easy to make them out.

Passing to the minute structure of these cells I would say that the chromophilic substance appears in small and scattered granules. So that the cells are almost clear; sometimes the perinuclear zone, by reason of a closer crowding of the granules, is dark.

In the lobes we find the same structure as in the central part of the cytoplasm; the bridge, on the other hand, is always destitute of chromophilic substance. In the basement substance I was able in only a few cells to distinguish fibrils, they being similar to those described in *Zamenis*. It had for the most part a fine granular structure. On the other hand, in the bridge, there were always rectilinear fibrils, which were parallel and did not anastomose. Pass-

ing into the central part of the cell and into the lobes they spread out like a fan, and then draw near together and anastomose.

The nucleus in *Testudo*, as in *Zamenis*, is large and vesicular with a membrane and acidophil nucleolus, as in the large cells of the mammals. Here, however, the nucleolus has at the periphery 1 to 2 basophil granules which are fine in *Testudo*, but thick in *Zamenis*. Differences between these nuclei and those of mammals are found in the linine reticulum, which in the latter is loose and delicate, in these it is close and contains in its meshes a great many acidophil and a few basophil granules.

Cells of the anterior horn. These are considerably elongated, with few dendrites; the chromophilic granules, arranged along the greater axis, are spindle-shaped with a clear outline, and are quite thickly crowded around the nucleus, but less so in the remoter parts. Between the granules there may be seen a great many true fibrils, with a hint of longitudinal striation.

The nucleus is exactly the same as that in the cells of the spinal ganglia which have already been described. The nucleolus has on its periphery three crescent-shaped basophil granules which touch at the extremities forming a ring.

Cells of the posterior horn. (1) Cells of the type of those in the anterior horn, but smaller in structure, which are probably cells of the cord. (2) Cells with very scanty cytoplasm, nucleus with acidophil membrane, reticulum of linine, with acidophil and basophil granules, and a small nucleolus, with the usual characteristics. They correspond to the cells of the substance of Rolando in mammals.

Granular Cells of the Cerebellum. They have a membrane and an acidophil reticulum. With Biondi's stain they take an azure color, without it being possible to make out the basophil granules. Perhaps there is a diffused substance that fixes the methyl green.

Cells of the Pallium. In *Testudo* most of these cells follow the type of the anterior horn, but with a smaller diameter; the cytoplasm is all massed upon the nucleus in

the form of a cone which lengthens out into an ascending dendrite; the nucleus has the usual characteristics of those in the large cells. In *Zamenis* and in *Lacerta* the cells follow the type of the elements of the posterior horn; the nucleus has a very small nucleolus and scattered granules.

Cells of the Neuroglia. They have the appearance of oval nuclei, with a light blue color, the basophil substance is scanty; it forms a fine close network with acidophil granules. The ependyma cells have a scanty cytoplasm which lengthens out into two prolongations at opposite poles of the cell; nucleus the same as those of neuroglia.

TAILLESS AMPHIBIA (ANEURA).

In this order I have studied two species: *Rana esculenta* and *Bufo vulgaris*.

Spinal ganglia. As far as the general characteristics of the cytoplasm is concerned, these cells resemble those of *Zamenis*; they are elongated in shape, the nucleus is eccentric and has an indentation in the margin which is turned towards the densest part of the cytoplasm, in which, as in *Zamenis*, there is a special disposition. But the fine structure of the cytoplasm presents striking differences in *Rana* and *Bufo*, for which reason I shall describe these two species separately.

In *Rana* the chromophilic granules are very numerous, and between them there are single curved fibrils which extend into the granules (an appearance which reminds one of the cells of mammals); but they are united in bundles as in *Zamenis*; only in the outer portion of the cell which is not so rich in chromophil substance, the fibrils cross one another from opposite directions, making a sort of net.

I have indicated the presence in that part of the cytoplasm which lies between the nucleus and the opposite pole of the cell, of a figure similar to that which I described in *Zamenis*, with the difference that in the peripheral part there are large chromophil granules concentric to the nucleus and forming an oval, and in the more central part of the cell, smaller granules which are concentric to that point of the cytoplasm which is equidistant from the nucleus and the opposite pole of the cell. (2).

These figures are much clearer in the cells of *Bufo* on account of the greater scarcity of the chromophil granules; the amount of chromophil substance varies considerably in the individual cells. The basement substance is formed of fibrils which intersect in a very complicated way.

In order to get an exact conception of the course of the fibrils in these cells, it is necessary to follow up different parts of the same cell in serial sections. I have not done this here, as it would go beyond the scope of the present investigation; but I will take it up at another time as a special piece of work. I will confine myself at present to what I have therefore been able to establish. In these cells the fibrils of the cytoplasm converge from the periphery towards the center of the cell forming a spiral cone vortex which rises to the pole where the nucleus lies, from the fibrils which surround the same nucleus. All the fibrils of the cytoplasm converge toward the lower part of the spiral lying obliquely to the greater axis of the cell, since in sections cut obliquely to the long axis of the cell the fibrils have a converging course, while in sections at right angles to the greater axis, they are concentric in a higher plane, and spiral in a lower plane.

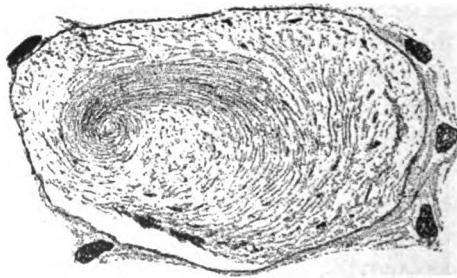


Fig. III. Cell of Spinal Ganglion of *Bufo vulgaris*.

Figure III drawn to a very large scale, so that the fibrils may be easily distinguished, shows a section of the cell which forms quite an acute angle with the greater axis. Fig. IV shows a section which forms a much less acute angle with the axis of the cell. In the first we see the fibrils converging towards the axis in a spiral fashion; in fig. IV the spiral is somewhat oblique. Between the

upper two-thirds and the lower third of the spiral, a compact fascicle is separated and goes off toward the margin of the cell, assuming the appearance of the axis-cylinder. From this point the spiral continues down, always confining itself more clearly to the lower pole of the cell.

Passing to the finer structure of these parts, I will say that in the outer portion of the cell the fibrils intersect in every way, forming close webs; in the more central portion in which the fibrils converge towards the axis they become more rectilinear, and quite distinct, no longer anastomosing, and are much more closely compressed as they approach the axis of the cell in which they form the spiral. (Fig. III.) In connection with the spiral we find thick chromophil granules. Instead it is always a coil of chromophil granules, which makes the fascicle that separates itself from the spiral and makes up the axis cylinder.

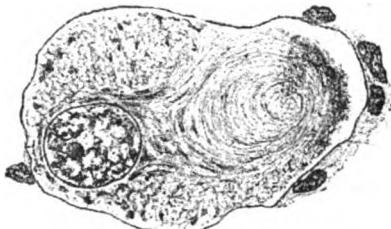


Fig. IV. Cell of Spinal Ganglion of
Bufo valaris.

The nucleus as in the reptiles is always a little flattened and very rich in scattered acidophil granules (especially in *Bufo*) with some fine basophil granules. The nucleolus has the usual characteristics. The small cells have, however, a special structure here; the nucleus is formed of a large basophil and a small acidophil granule.

Cells of the anterior horn. Here also as in reptiles, these elements are elongated. The perinuclear part of the cell is prolonged indistinctly into the large dendrites. They have spindle-shaped chromophil granules separate from them, larger in the central part of the cell, finer and longer the further they are from the base of the dendrites. In the basement substance of the dendrites, there are fibrils exactly

the same as those I described in the homologous cells of the mammals.

The nucleus is round, similar to that of the cells of the spinal ganglia; in *Bufo* it is clearer than in *Rana*, not so rich in acidophil granules so that the linine reticulum may easily be seen, the basophil granules which lie in the periphery of the nucleolus are very fine.

Cells of the posterior horn. There is nothing to be seen but a very thin margin of cytoplasm; the membrane is acidophil and contains a fine acidophil reticulum with a great many basophil granules, and sometimes a very small nucleolus formed of an acidophil and 1 to 2 basophil granules. Basophil granules adhere to the inner face of the membrane, giving it a light blue color.

Purkinje cells. Likewise resembling the type of cells of the anterior horn, they differ from it in the greater scantiness of the cytoplasm, and in the characteristics of the nucleus; this is darker by reason of the greater quantity of diffuse acidophil substance. The basophil granules appear here in the form of fine scattered grains.

Cells of the Pallium. In the large majority of these cells all the cytoplasm is collected into a conical hood, which lies on top of the nucleus. The characteristic features of the nucleus are intermediate between the nuclei of the cells of the anterior, and of the posterior horns; there is a little nucleolus with the usual characteristics, in which however the basophil granules are thick, and the acidophil portion scanty. There are also a great many scattered basophil granules in the nucleus. (Plate II, fig. 12).

In the optic lobes I have observed two kinds of cells.

1. Cells similar to those just now described in the Pallium.
2. Cells similar to those of the posterior horn.

Cells of the neuroglia and ependyma. The nucleus is formed of a thick membrane, and of a basophil reticulum with swellings in the nodal points. The ependyma cells have scanty cytoplasm.

AMPHIBIANS (URODELA).

In this order I have studied *Triton cristatus*, *Speleopelma fuscus* and *Proteus anguinus*.

Spinal ganglia. Naturally it was impossible to isolate these organs, so I was obliged to fix the vertebrae column, and then decalcify it, or else to fix it in Fleming's solution; therefore, the methods which I finally adopted could not be more than partially successful.

With Nissl's method I was able to see a wide aureole of cytoplasm with chromophil granules, (many fragmentary and changed by nitric acid.) In the large oval nucleus I was able, by staining with safranine to bring out a large number of scattered granules and one to two nucleoli with the usual structure, (a central part colorless, and 2 to 3 peripheral granules deeply stained with safranine).

Cells of the ventral column of the medulla. 1. They are oval. The cytoplasm in *Spelerpes* forms a faint aureole, in *Triton* it is more distinct, it contains sharply defined (chromophil granules) (spindle-shaped) these always tend towards the direction of the principle dendrite in which spindle-shaped chromophils may also be seen. In the basement substance, no fibrils were observed.

The nucleus is oval, it has a thin acidophil membrane. (Fig. 17); the contents are composed of granular acidophil masses, of some basophil granules and of an acidophil nucleus with 2 to 4 basophil granules at the periphery; in *Spelerpes* (Fig. 19) and in *Proteus* the scattered acidophil and basophil granules are more numerous. The nuclei therefore appear darker, and the nucleolus is less distinct.

Dorsal cells of the medulla. The cytoplasm in *Triton* is very thin, in *Spelerpes* and *Proteus* it cannot be seen. The nucleus is oval and has a fine basophil membrane, in *Triton* and *Proteus* there is a close basophil reticulum with scattered basophil and acidophil granules. The nucleolus is absent in all of them.

Cells of the Pallium. There is no cytoplasm to be seen, only at the upper end of the nucleus the conical base of a prolongation in which some chromophil granules are to be found. The nucleus is oval, clear, somewhat spherical, especially in *Triton*. (fig. 14). There is an acidophil reticulum with basophil granules in the nodal points (somewhat larger in *Spelerpes*, fig. 2) to which thick little acidophil

granules adhere; at other times scattered acidophil granules are found in the nucleus. In *Triton* there are also one or two round acidophil nucleoli, which are not surrounded, like those just described, by basophil granules.

Granules of the olfactory bulb. There is no cytoplasm visible, the nucleus is oval and has a thin basophil membrane. It is formed of large basophil trabeculae between which stand small acidophil trabeculae. (Fig. 15.)

In the optic lobe, three kinds of elements are to be found. 1. Granules like those in the olfactory bulb. 2. Elements more abundantly supplied with granules, and less rich in basophil substance. 3. Cells whose cytoplasm is comparatively abundant, and with spindle-shaped chromophil granules; they have a dark nucleus which in *Triton* contains basophil granules, and a homogeneous acidophil substance in *Spelerpes* and in *Proteus* a granular acidophil substance, sprinkled with basophil granules, and in all of them a nucleolus of usual character. (Fig. 13).

Nuclei of neuroglia. In *Triton* they are considerably elongated, they have a basophil membrane and large basophil granules separated by a delicate acidophil reticulum. In *Proteus* and *Spelerpes* they are more vesicular, in the latter there is no reticulum, but scattered basophil granules.

Ependymal cells. Cytoplasm abundant, nucleus with large homogeneous basophil granules (fig. 16); they resemble the granules, but have a greater quantity of basophil substance.

FISHES (TELEOSTS).

I have studied but one example of this sub-class: *Tinca vulgaris*.

Spinal ganglia. The size of the cells in this specimen varies widely. They are elongated in shape, like a truncated pyramid the nucleus is eccentric, and is situated on the narrowest side.

The chromophil substance is in the form of very minute granules. Towards the periphery of the cells and around the nucleus, it is more abundant and forms dark masses. In the part of the cytoplasm that lies between the nucleus and the extremity of the cell, it is more scanty, so that

that portion of the cell looks like a round clear space, especially in the central part, in the middle of which area there is no staining at all to be seen. The small cells are markedly darker than the large ones; they also are elongated in shape.

The nucleus follows the type of that found in mammals; its nuclear reticulum is very close and dark, the nucleolus is always somewhat eccentric, with blue basophil granules.

Cells of the ventral column of the medulla. They are pyriform; the chromophil substance is deposited in small crowded granules, so as to give a very dark appearance to the cell (in specimens stained with thionine). At the base of the large dendrites they appear as narrow spindles. No fibrils are seen in the basement substance; this has the appearance only, of being slightly striated. The nucleus is identical with that of the cells of the spinal ganglia, except for its greater size.

Purkinje cells. They are bottle-shaped, otherwise their structure is the same as that of the ventral cells. The nucleus is found at the base of the cell, and has the usual structure of the large cells.

Granules of the cerebellum. They are smaller than any of the granules which have hitherto been noticed, (fig. 20) they have an acidophil membrane, and 4 to 6 granules, arranged without any particular order.

In the other regions of the nervous centers (optic lobe, basal ganglia) we find three types of cells: 1. Small cells with a scattered thin aureole of cytoplasm, nucleus with an acidophil membrane, scattered acidophil and basophil granule, and besides the scattered granules an adherent basophil, and a small acidophil granule. 2. Large cells of the type of the ventral cells of the medulla. 3. Cells of the type of the granules of the cerebellum.

Cells of neuroglia and of the ependyma. Of these, two kinds are found—one with large nuclei, which have a loose basophil reticulum, of a blue color; one with smaller nuclei with a large membrane reticulum, and 1 to 2 large basophil granules.

FISHES. (SELACHIENS).

I have studied two examples: *Raja asterias* and *Scyllium canicula*; this material was kindly sent to me by Dr. Lobianco of the Zoological Station of Naples, whom I here wish to thank.

Spinal ganglia. I was successful only in getting the ganglia of *Raja* several hours after the animal's death; in it I was able to see only that the cells were very large with a great many crowded chromophil granules; the nucleus is large, vesicular, membranous, and with an acidophil reticulum; nucleolus with the usual characteristics.

Cells of the ventral columns. The central part of the cellular body, especially in *Scyllium*, in the immediate vicinity of the nucleus, is prolonged into large dendrites; the distinction between the cellular body, and the origin of the dendrites is still less marked than in the other specimens already studied. These dendrites preserve the characteristics of the central part of the cell, together with considerable size through a long space. (Fig V.)

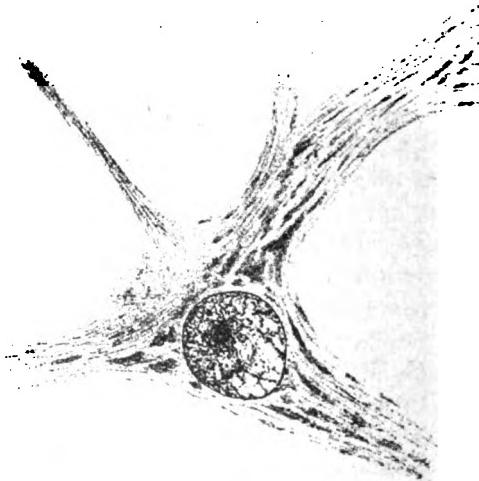


Fig. V. Cell from Ventral Column of Medulla in *Scyllium canicula*.

The fine structure of the protoplasm is quite different in *Raja* and in *Scyllium*. In *Raja* the chromophil granules

are fine, elongated and close in the perinuclear region. They spread and thin out in the distal portion of the cell. In the basement substance there is a suggestion of a striation.

In *Scyllium* the chromophil granules are larger, they are irregular in shape, with a well-defined outline, and are completely isolated so that the basement substance can be studied quite easily. (Fig. V). Here also the granules in the dendrites are spindle-shaped; they lie along the greater axis of the dendrite, and become fewer, thinner, and more attenuated the further they are from the point of origin. At a distance of 90 to 120 *mmm* from their origin, the dendrites are completely destitute of chromophil granules.

In the basement substance one could distinguish fibrils, also in the lower part of the cell, where they were thin, short and wavy, with an irregular course, and apparently they continued in the chromophil granules, while in sections in the upper part of the cell, they were all pointed, like the chromophil granules, towards the dendrite. Certainly in the initial portion of the dendrites, they tend to unite in bundles, and the further they go away from their origin the more they become long and straight, and pressed together. The fibrils undoubtedly contract from the anastomosis between them; because it is by no means rare to find in all the cells, in the superficial parts as well as deeper in the cytoplasm, Y shaped branchings of a fibril, and anastomosis between two fibrils. When the dendrite becomes attenuated and loses the chromophil substance, the fibrils become compacted, parallel, straight, and more deeply stained.

As to the relations of the fibrils of the different dendrites between the same, from what I have said about the length of the fibrils, one might logically infer that I was not able to see the transit (passage) of single fibrils from one dendrite to the other. I have seen, however, that fibrils and chromophil granules in bundles have in some sense passed directly through the margin of the cell.

In the cone of origin of the axis cylinder, the fibrils have the usual appearance. I have never been able to see any connection between these fibrils and those of the rest of the protoplasm. The nucleus of these cells, in *Raja* as

well as in *Scylium* does not differ much from those of the large cells of other animals. It is quite large, especially in *Scylium*, vesicular, with a beautiful linine reticulum, in the network of which are found very large acidophil granules (more numerous in *Raja*) and sometimes intermingled with basophil granules, especially in the smaller cells. The nucleolus is always single in *Scylium*, sometimes double in *Raja*, and has 1 to 3 minute basophil granules on the periphery.

Dorsal cells of the medulla. The cytoplasm is either not distinguishable, or is reduced to a thin layer around the nucleus, which lengthens into a slender prolongation. The nucleus in *Raja* has a thin acidophil membrane. There is no reticulum, but a round central mass, separated from the membrane by a broad clear space with a slightly irregular outline; the membrane is composed of crowded acidophil granules interspersed with basophil granules. (Fig. 22.) In *Scylium* there is a fine acidophil reticulum which fills up the whole nucleus with minute basophil granules which gives a bluish tinge to the nucleus; also a small acidophil nucleolus generally eccentric, to which adhere 1 to 2 pretty well marked basophil granules.

Granules of the cerebellum. They repeat with some difference the type of cells just described in different animals. As in all the granules already studied, the cytoplasm cannot be distinguished. The nucleus has an acidophil membrane, which in *Raja* includes a central mass formed by basophil granules, among which are interspersed some very small acidophil granules (fig. 32); between the membrane and this mass there is a large clear space. In *Scylium* the contents of the nucleus are represented by a faint (pale) acidophil reticulum, sprinkled with numerous basophil grainlets, and by a small nucleolus, formed by an acidophil and a basophil granule. (Fig. 24).

In the other regions of the nervous centers, (mid-cerebrum, basal ganglia) we find elements similar to those described in the medulla; large cells like all the ventral, and small cells like all the dorsals. In *Raja* we find in addition a type of cell which I have not noticed, in the

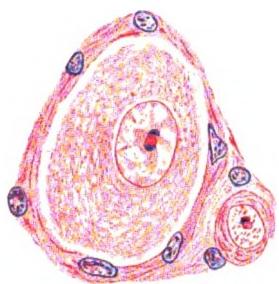


Fig 1

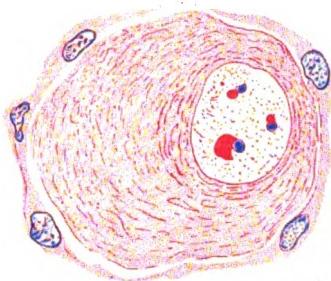


Fig 2.

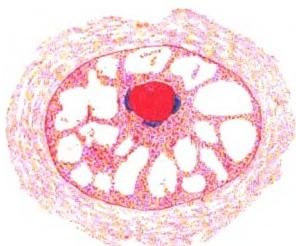


Fig 3.

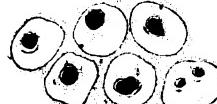


Fig 4



Fig 5



Fig 7.



Fig 6.

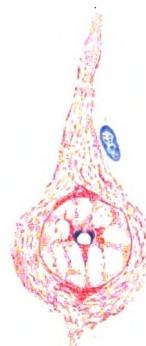


Fig 8.



Fig 10.



Fig 9.

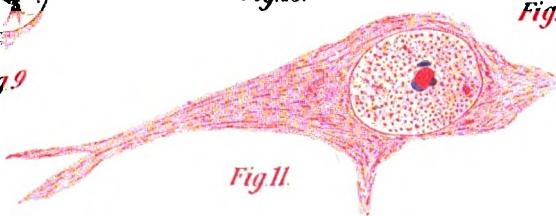


Fig 11.

medulla (fig. 25); the cytoplasm forms a thin penumbra; and is prolonged into a dendrite; the nucleus is large and contains an acidophil mass separated by a wide clear space from the fine nucleated granular membrane, sprinkled with a few very small basophil grainlets. These elements represent an intermediate type between the ventral cells, and the dorsal cells of the medulla.

Granules of the olfactory bulb. Resemble the granules of the cerebellum.

Cells of the neuroglia have a slight penumbra of cytoplasm; the nucleus in *Scyllium* is identical with that in the cells of the neuroglia in mammals, in *Raja* it is a little smaller, round, very blue, with crowded basophil granules.

EXPLANATION OF PLATES.

All of the drawings were made from specimens colored by Biondi's method, by Zeiss camera lucida; Zeiss, apochromatic 2 mm; 1.30; ocular, 8 comp., excepting Fig. 1, which was observed with compensating ocular 4.

PLATE I.

Fig. 1. Large cell of spinal ganglion of guinea-pig. The nucleus shows a reticulum and a nucleolus formed of a central acidophil part and two granules of nuclein. The small cell has a nucleus formed of an acidophil and a nuclein granule.

Fig. 2. Large cell of spinal ganglion of guinea-pig. Nucleus with anomalous structure. Three nucleoli rich in nuclein.

Fig. 3. Nucleus of a cell of the anterior horn of guinea-pig, with a small portion of surrounding cytoplasm. Loose nuclear reticulum, large acidophil nucleolus with three minute granules of nuclein at the periphery.

Fig. 4. Granule cells from cerebellum of guinea-pig. Large central granule of nuclein.

Fig. 5. Granule cells of cerebellum of dog, reticulum of nuclein with minute granules in the nodal points. The internal face of the nuclear membrane covered with granules of nuclein.

Fig. 6. Cell from the substantia gelatinosa of Rolando in the guinea-pig. Nucleus formed of a large granule of nuclein and a small acidophil granule.

Figs. 7 and 9. Medium sized pyramidal cell of the cortex of guinea-pig with varying arrangements of the nuclein.

Fig. 8. Large pyramidal cell of the guinea-pig. In the nucleus two minute granules of nuclein surround the acidophil part. At the site of the origin of the dendrite there is a nucleus of a neuroglia cell.

Fig. 10. Cell from the ependyma of the medulla of guinea-pig.

Fig. 11. Cell from anterior horn of frog. Nucleus rich in acidophil granules. The nucleolus has three minute nuclein particles on its periphery.

PLATE II.

Fig. 12. Cell from the optic lobe of *Rana*. Nucleus of the first, (smaller) contains six nuclein (basophil) granules of diverse sizes. In the second, there is an acidophil nucleolus with two granules of nuclein at the periphery and many scattered basophil granules.

Fig. 13. Cell from the optic lobe of triton. Nucleus rich in acidophil granules as well as nuclein masses. Nucleolus with basophil masses at the periphery.

Fig. 14. Cell from the pallium of triton. Acidophil reticulum with nuclein masses at nodes. Nucleolus acidophil.

Fig. 15. Cell from olfactory bulb of triton. Large trabeculae of nuclein.

Fig. 16. Cell from the ventricular ependyma of triton. Nuclein abundant.

Fig. 17. Cells from ventral side of medulla of triton. Cytoplasm scarce, nucleus with nuclein granules. Nucleolus with four nuclein granules at periphery.

Fig. 18. Cell from basal ganglia of triton. Trabeculae of nuclein and acidophil granules.

Fig. 19. Cells from ventral side of medulla of *Spelerpes fuscus*. Cytoplasm scanty and continuous into a dendrite; numerous acidophil granules and scanty nuclein. Nucleoli with three nuclein masses at the periphery.

Fig. 20. Granule cells of cerebellum of *Tinca*. Small granules of diffuse nuclein.

Fig. 21. Cells of pallium of *Spelerpes fuscus*. Acidophil reticulum with nuclein masses of various sizes at the nodes.

Fig. 22. Small cell of the basal ganglia of *Raja*. Nuclein and acidophil substance united in small masses to the nuclear membrane.

Fig. 23. Granule cells of cerebellum of *Raja*.

Fig. 24. Granules of cerebellum of *Scyllium canicula*. Small nuclein masses, small nucleolus made up chiefly of nucleins.

Fig. 25. Medium sized cell of basal ganglia of *Raja*. Cytoplasm scanty, mostly collected into a long dendrite. Several nuclein granules adherent to nuclear membrane.



Fig. 12

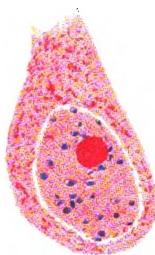


Fig. 13.

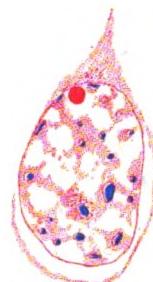


Fig. 14.

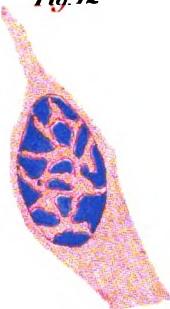


Fig. 15.



Fig. 16.

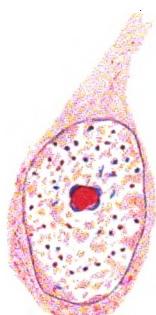


Fig. 17.



Fig. 18.

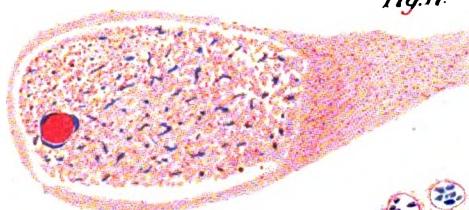


Fig. 19.



Fig. 20.

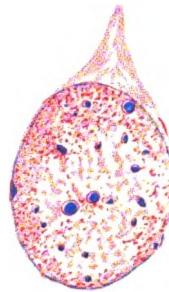


Fig. 21.



Fig. 22.



Fig. 23.



Fig. 24.



Fig. 25.

BRAIN BANKRUPTCY OF BUSINESS MEN.

*A COMMENT ON PSYCHICAL SANITATION.—EX-GOV.
FLOWER.*

By C. H. HUGHES, M.D., St. Louis.

THE restless brain-worker of our large cities—the man of affairs, thinking he knows as much about the needs of his brain, when it is tired and when other parts of his organism fail in consequence, as he does about finances, etc., has devised the club and the tour abroad as a cure, and given the medical profession the go-by and the undertaker, in instances too numerous to mention among our brain broken men of affairs, too early a summons.

The club, the tour abroad and the yacht are usually self-prescribed, while beginning break-down of brain and nervous system are left to repair themselves. The brain fag, the nervous dyspepsia and the insomnia of the business man are serious affairs, even in their beginnings, not to be lightly regarded. They are readily remediable, of course, but not very certainly so, by the prescriptions of a Wall Street money-changer, a railroad magnate or the millionaire manufacturer. These men are so accustomed to command success that they imagine that with a little inquiry of their wife's physician, the reading of the newspapers and a seaside or mountain or club experiment or two, they can figure out what is good for them and they proceed to seek their health upon their own amateur medical

judgment, when they would not think of trusting the management of their business to a medical man. He would not, in their opinion, have the trained observation and experience for forming a correct judgment of business affairs, yet these masters of financial and commercial strategy undertake this regulation of their own systems, though they would decline the helm of a ship in a storm.

Your modern high-pressure business man needs constantly the best quality of medical, as he does of legal counsel to keep him out of trouble. Premature collapse is pending with most of them, as it has overtaken so many, because of the way they live. The folly of the day with men of affairs is to have no stock taking until after sanitary bankruptcy, when relief measures are often futile. After a blood vessel has burst or become plugged, a tumor has formed in the brain or the reckless nerve strain has developed into advanced Bright's disease or sugar in the urine or other destructive disease has set in and sent the patient prostrate to bed, it is often too late for sanitary salvation. The Neurologist is a necessity of his life.

If the foundation of a business man's house cracks or a fire is discovered in his building, he loses no time in calling in the architect or the fire department. If legal complications threaten he consults his already retained lawyer, or even if his horse gets a little sick he has him promptly cared for, but his own damaged machinery he neglects until he becomes helpless or tries self-tinkering on it till he is hopeless, and then some one else, as often as not, selects his physician for him. It may be a good selection or it may be an indifferent one. The selection is usually a matter of luck, pressing necessity or convenience. It is not often one of business judgment, but more often the lodge, the club or the church he belongs to, determines the doctor he is to have in the crisis of his life.

The kind of medical aid that many great men receive in grave and critical emergencies in their life history is often a source of surprise to the profession. They are often men of the most limited caliber and professional resource, sometimes not even regularly educated physicians. The

vagaries of the elder Vanderbilt in this regard, not to come nearer to the present time, may be cited as an illustration.

Ordinarily, the all-round family physician is not the only medical counselor a man of great business affairs should have. He should have the advice and care of one accustomed to estimate the strain of business upon the nervous system as well as upon the entire organism, and to adapt brains and nervous system to the demands upon them. Conditions of existence under present business demands have greatly changed in American business and professional life during the past generation, and as all extensive and prudent firms have their legal advisers to keep them out of the meshes of the law, so all men of large affairs should be guided by medical counsel in the management of their own systems, and adapt them to the conduct of their business affairs. The proper care of the boss is as essential as the proper conduct of the business. The best part of a business man's plant is a properly cared for directing head. There is great capital in a great strong caput capable of carrying the greatest burdens of business without breaking.

The care of a business man's head should not be intrusted to a surgeon exclusively or always to the man whose specialty is women and children. No reflection is here meant on the family physician, who is the best of medical men, and indispensable to the home, in spite of the morbid disposition to hunt out a specialist for every family ill. The modern millionaire business man is a new factor in the problem of sanitation. He is a high pressure physical machine that must keep up with the long distance telephone, phonographs, graphophones, cables and wireless telegraphy of the day, going the pace that kills, unless wisely regulated, which means neurologically and psychologically governed in its movement and powers.

These men have a healthy look, but so does a steam boiler or magazine, on the outside, to the ordinary observer till it explodes and then you see nothing but the wreck of the thing that was. The case of ex-Governor is in point. It was not exclusively the ice water nor the hearty meal

that killed Gov. Flower. These gave his susceptible, over-heated, overworked system a shock and caused the arrest of functions necessary to the maintenance of organic equilibrium and life.

Though Gov. Flower "looked healthier than any men he was accustomed to meeting every day," he was strained to the utmost point of brain and nerve endurance when the blow came that killed him. Though it was not the ice water nor the hearty meal that killed him, they were not prudently taken, nor the fishing in the hot sun. They were the last feathers on the camel's back. He had doubtless often before drunk copiously of ice water and eaten quite as heartily, when his power of resistance to such systemic shocks were greater. And he had doubtless often fished in the hot sun "many a time and oft" before, without a threatened fatality.

"Look at the tremendous activity he has crowded into the last four years of his life and the responsibilities under which he has been resting," exclaims Dr. Allen, his family physician. But he did not rest under his responsibilities.

He "had a similar attack the first year he was Governor," but he then had more resistance and recovered. But this time he was more tired than ever before. He "was tired and went for a little fishing and to rest" and the weather was very hot and oppressive. He had fished two hours in the broiling sun. He went for refreshment and drink and "the pitcher was broken at the fountain." The golden cord was loosed. The pneumogastric nerve from the brain to the heart and the sympathetic centers therein appear to have failed in powers of innervation, according to his physician's statement, and the vital organ failed in its function of sending blood to the brain and body." "He swooned away and never rallied." If he had there and then been laid immediately prone upon the floor and skillfully ministered to (the record does not state that any physician was immediately at hand) he might have rallied once again and the inevitable might have been postponed yet a little longer.

The heart diseases of which many men of mighty effort

and great success in life are often reported to have died are frequently conditions of heart nerve tire and paralysis (pneumogastric and ganglionic neurasthenia and pareses); a local expression of brain fag and general nervous exhaustion. Heart paralysis is usually heart nerve paralysis, nerve centers within and above the heart, in the brain, giving out.

Dyspepsia is usually a brain strain and brain worry disease, dependent on the nerve connection of stomach and brain, as heart failure is often so dependent.

The contented day laborer and the man without ungratified ambition or unfruitioned aspirations is not dyspeptic. Hogs and wild animals living in a state of nature never have indigestion. Trained trick animals often do.

Wall street, worry and overwork wrecked Gov. Flower. They were the fatal causes, like the frequent drippings that wear away the stones, which led to his physiological bankruptcy and brain and nerve tone failure and consequent heart collapse.

When the brain breaks and the nerves give out the organs they govern are sure to fail. Man's brain is not a perpetual-motion machine and there are no devices known to science which will enable the machinery of mental movement to be constantly and incessantly overworked without a collapse.

Neurology can protect against and postpone penalty. Neurology would have sent a man in Flower's condition off to sleep by the sea rather than sent him a-fishing in the sun and to the luxury of a club.

When men of affairs manage their own cases when ill, they often have fools for physicians. A man is ill in his nervous system when he is habitually tired and can not rest well and be thoroughly repaired from day to day by natural rest and sleep. He no longer lives on his nerve tone interest, but is exhausting his reserve principal and is not far from the bottom of his fund.

The successful business man does not manage his business as he manages himself, because he is a better financier than he is a physiologist. If he were not he would bankrupt himself in the beginning of his business career.

The close-at-hand home club as a sanitary device is not a success. Too many good fellows of a kind collect there. They are not all brain fagged, and the diversions suggested when these good fellows meet are rather too tonic for a worn-out brain.

That tired feeling of the really brain-fagged man may be dissipated in a highball or a cocktail, but the indiscretion has often to be atoned for in finally finding a more restful place away in the mountains or by the sea or on it.

Clubs are good social treats and retreats, but for the heavily business burdened, they are, aside from their social benefits, a delusion and a snare. The brain rest seeker may find diversion, but not much rest at the club.

The first thing for a brain broken man is a capable medical adviser, who knows his needs and dares prescribe them.

These startling sudden deaths among our millionaire masters of finance and affairs are not the fault of the profession, they are the fruits of over-weaning egotism, conceit or self-negligence. They are the omission suicides of the mighty; the immolations of the magnates of money on Mammon's merciless altars.

Since this was penned a statesman of Missouri has fallen because of the same folly of postponement of attention to premonitory symptoms, and the papers announce that "Silver Dick Bland," member of the American Congress and champion of free silver, suddenly stricken with paralysis, went to sleep and after thirty-six hours of sleep, passed away. The same old story.

SELECTIONS.

NEUROTHERAPY.

CARBOLIC ACID IN TETANUS.—Ascoli records in the *University Medical Magazine* his success in the treatment of tetanus by the hypodermic injection of large doses of carbolic acid. If about the normal this would be good enough but how much would be absorbed?

PAIN.—Prompt relief, unaccompanied by habit or untoward after-effect is what the up-to-date practitioner desires most in these cases. Pain over lower border of liver, or stomach, or headache, sideache, backache or of any other description, will yield to two five grain tablets of Antikamnia, repeated in an hour or two, if needed. For very prompt relief, crush tablets and swallow with a little wine, diluted whisky or toddy.—*Ohio Medical Journal*.

HYPODERMATIC USE OF MURIATE OF HEROIN.—Eulenburg, of Berlin (*Deutsch Med. Wochensch.*, March 23d, 1899), concludes that the hypodermatic dosage corresponds to that of the morphine salts. Larger doses produce vertigo, exhaustion, malaise and vomiting. Symptoms rather unpleasant than dangerous. It has the same analgesic action in neuralgia, etc., as in the case of morphine. He regards it of value in breaking off the morphine habit.

THE ACTION OF DIONIN AS A SUBSTITUTE FOR MORPHINE according to Heinrich (*Wien Med. Blatter*, March 16th, 1899) is midway between morphine and codein. Like heroin is efficacious in acute pulmonary disease and asthma, and during withdrawal of morphine from habitues. Dosage of dionin is one-third greater than that of morphine.

THE RELATION OF NERVOUS AFFECTIONS TO DISEASES OF THE FEMALE PELVIC ORGANS.—Dr. D. Sher-

wood Dunn, of Boston, (Amer. Assoc. Obs. and Gynecol., Cin., Sept. 20, 1898) in great neuroses of neurasthenia, hysteria and insanity is totally opposed to any operative procedure, except when pathologic conditions are demonstrable. He has no confidence in operations upon healthy organs for the cure of any neurotic condition, and believes that these are now generally condemned by the profession. He, however, looks upon the position taken by some neurologists, that there is no relation of cause and effect between the various neuroses, psychoses and disease of the female pelvic organs as being as extreme and as condemnatory as the advocacy of the removal of normal organs from the female pelvis for the cure of nervous diseases, by some ill-advised persons calling themselves gynecologists. In operating upon diseased conditions in the pelvis, the gynecologist does not expect to remove the symptoms of the neuroses, but only those symptoms properly belonging to the pelvic disease itself. Strange and disappointing as it might seem to some of the critics, when those pathologic pelvic conditions are removed or corrected, the nervous system, relieved from the source of unceasing irritation, gradually returns to its normal poise, and the patient is cured of her neuroses as well as her pelvic disease.

THE NEWER SUBSTITUTES FOR MORPHIN.—H. C. Wood (*Merck's Archives*, March, 1899) states that within the last two or three years, among the many compounds introduced as calmatives, three have been placed on the market which seem possessed of sufficient power to promise them a role of more or less importance in future therapeutics. These three drugs, which are all synthetic substitution-products of morphin, are known as peronin, heronin, and dionin. Peronin, the oldest and most thoroughly studied of the three, is the hydrochlorate of benzylmorphin. The feebleness of the narcotic properties of this drug in comparison to its asserted power to allay cough led Mayer to make especial study of its action on the bronchial reflexes. He found that peronin almost completely offset the tending of the vapor of ammonia to excite cough, and concluded that the drug bears special relations towards the respiratory

tract. From the studies of Dreser and Strube the action of heroin, which is the diacetic ester of morphin, seems to be also chiefly on the respiratory function. Pharmacologic studies of dionin, the hydrochlorate of ethyl-morphin, have been made by von Mering, who states that it is of somewhat stronger and prolonged action than codein. The therapeutic properties of these three remedies are in many respects similar. The chief use clinically for which they have been employed is to quiet irritative cough, especially such as often occurs in phthisical cases. For this purpose the reports are unanimously favorable; rarely do they fail, and they are nearly free from unpleasant after-effects. The forms of cough they have been used in are as many as are the different causes of cough; in acute bronchitis, in chronic bronchitis, in various reflex coughs they have proved of benefit. It is claimed for all of them that they do not choke up the secretion nor affect disagreeably the general system. Heroin has been especially recommended in cases of dyspnea, either cardiac or pulmonary in origin, by Strube; but the very fact of its benumbing the respiratory center would suggest that it must be used cautiously for this purpose lest there result a failure in the elimination of the carbonic acid. As for other therapeutic virtues, observers agree that heroin possesses neither analgesic nor hypnotic powers. Dionin, however, has been used by Korte to relieve pain, with asserted good results. In pains of inoperable cancer, of rheumatic arthritis, etc., he found it of great service, although not so powerful nor certain as morphin. From the results obtained by Meltzer peronin seems to offer prospect of proving a useful somnifacient; he found it especially useful in obstinate cases where the ordinary hypnotics have lost their power. Concerning the drawbacks of these remedies, the only disagreeable symptom noted, save in one or two cases, is a tendency to an increase in the night-sweats of consumptive patients following the use of peronin. Dionin seems rather to lessen the amount of sweating. Of course it is hardly possible to say as yet whether these remedies are likely to cause drug-habits. It is worthy of note in this connection that both

heroin and peronin must be given in ascending doses to maintain their effect. The dose of peronin (soluble in 133 parts of water) is $\frac{1}{6}$ to $\frac{2}{3}$ grain; of dionin (soluble in 7 parts of water) $\frac{1}{6}$ to $\frac{1}{2}$ grain; of heroin (very slightly soluble) 1-12 to $\frac{2}{3}$ grain.

SODIUM GLYCERINOPHOSPHATE IN NERVOUS AFFECTIONS.—Kahane has found sodium glycerinophosphate of great service in hysteria, neurasthenia, and in nervous affections of anemic origin. He prescribes it as follows:

Rx.—Sodium glycerinophosphate..... 5 drams.
 Distilled water } of each 10 drams.
 Orange-flavor water }
 Syrup of orange peel..... 4 drams.

Sig.—A teaspoonful thrice daily.

NEURO-PHYSIOLOGY.

THE NERVOUS SYSTEM AND NUTRITION.—Abstract from Archiv für pathologische Anatomie und Physiologie und für klinische Medicin. (*Virchow's Archiv*). [Band 155, Heft 1] by D. R. The old dispute as to whether the nervous system exerts a direct trophic influence on the tissues or not still goes on. Formerly the effects of a section of a nerve or resection of a ganglion were investigated; at present the modification of infectious processes in parts of the body deprived of their nerve-supply is generally studied. Salvioli and Spangaro admit that the nervous system regulates nutrition, but not by trophism, but indirectly in that it stimulates the organs to action and regulates the blood-supply going to them. Their present experiments were made on pigeons. Normal pigeons have a high degree of resistance against anthrax-infection. Of 38 inoculated 12 died, a mortality of 31.58%, which corresponds pretty closely with that found by Oemler. They then, in another series of birds, resected the sciatic and crural nerves, and then inoculated one group immediately, the other group in forty days, with anthrax into the paralyzed limb. Of the first 23%, of the second 14.3% died. In the first series the local

inflammatory signs were much better marked than in the second. The mortality figures show that an injury to the peripheral nerves does not in any way reduce the natural resistance of pigeons to anthrax. The local inflammatory reaction, so marked in the group injected at once, is explained on the ground of the vasomotor paralysis, through which a greater amount of blood is enabled to reach the affected part. The nutrition of the tissues is more efficient and the inflammatory process more energetic in such parts than in anemic, poorly nourished tissues. In the second experiment pigeons were deprived of one cerebral hemisphere and then inoculated, after a variable time, with anthrax. The mortality was 75% in those immediately injected, and 71.4% in those inoculated after a time. This evident great reduction in resistance the authors ascribe not to the loss of any trophic influence, but to inanition which a grave lesion like removal of one hemisphere is bound to produce. On feeding the operated animals carefully so that they maintained their weight, the mortality after anthrax-inoculation was only 25 per cent., which proves that the animals deprived of one hemisphere conduct themselves toward anthrax-inoculation like normal pigeons.

Another series of birds was then deprived of both cerebral hemispheres—if the animals were fed and their nutrition maintained as well as possible, the mortality after anthrax-inoculation was 35.5 per cent. If the animals were left to themselves, *i. e.*, were not artificially nourished, and then inoculated, the mortality reached practically 100 per cent. It is apparent from those experiments that a trophic influence is not exerted by the cerebral hemispheres, and that the natural resistance of pigeons is not reduced by their extirpation. The central nervous system regulates the functions of organs; and of tissues, but it does so indirectly, by stimulating them to activity and controlling the blood-supply. When this stimulating action ceases, the organs suffer in their metabolism; but this can be counteracted by abundant supply of food. If, on the contrary, the nervous system regulated the nutrition of organs directly, the administration of food would be powerless to prevent atrophy

after cutting off the nerve-supply, for the food could no longer be taken up and transformed by the tissue.

The abundant feeding of pigeons deprived of one or both hemispheres would then be useless in combating anthrax-infection. The fact, however, that such pigeons can be kept alive by proper feeding proves that it is not the nerve-injury or the suspension of the trophic influence which reduces the resistance to anthrax-infection, but that it is the inanition to which the animals fall victim immediately after the extirpation of one or both hemispheres.

NEURO-PATHOLOGY.

THE PATHOLOGY OF THE PINEAL.—A recent meeting of the Pathological Society at London was devoted entirely to the pathology of this gland, and fourteen cases were reported by the members present, specimens being shown from ten of them. Seven were cysts, four sarcomata, one gummatous enlargement and one calcareous deposit. One of the cysts was interesting from the fact that its inner surface was lined with cells containing large amounts of pigment, in the very situation where the choroid coat lay in the ancestral eye, and curiously enough, several of the sarcomata were pigmented ones.

After the reports of the cases were all in, the president called for remarks upon the general subject, but the absolute silence which followed was eloquent of the state of our knowledge of the gland even to-day. In all the cases reported there was only one symptom which was in any way peculiar or was common to more than two of them, and that was prolonged drowsiness, which was present in four. This was of long duration, lasting in one case for three months, and was of unusual character, as it never approached coma and the patient could be readily roused at any time, or would even answer questions without apparently awakening. As Dr. Ogle, who reported six out of the fourteen cases pointed out, this was most probably due to pressure upon the choroid plexus and interference with the circulation of the ventricles; but it is an interesting coincidence that Dr. Patrick Mason has reported the pineal

body as found greatly enlarged in two cases of the singular African "sleeping sickness." The drowsiness of this disease is precisely of this peculiar, easily-roused and chromatic character, lasting for months and gradually deepening into asthenia, unconsciousness, convulsions and death. As there are two advanced cases of this disease in the Seamen's Hospital at the Albert Docks at present, the cranial results of the autopsies will be awaited with much interest.—Editorial *The Journal A. M. A.*, December 31, 1898.

BRAIN OF INSANE AT STATE HOSPITAL, MORRISTOWN, PA.—Three (3) were 50 oz. and over in weight, all women; one (1) weighed 45 oz.; eleven (11) were from 40-44½ oz.; six (6) were under 40 oz.; weight of two not taken; these were about average size. Total number examined, 23. Largest male brain weighed 44½ oz.; case of chronic dementia, No. 13. Largest female brain, 51½ oz.; case of chronic melancholia, No. 30. Smallest male brain weighed 43½ oz. No. 11, case of general paresis. Smallest female brains weighed 35 oz.; No. 10, case of chronic dementia and No. 37, case of chronic mania.—Annual Report Dr. D. D. Richardson, Chief Physician.

CLINICAL PSYCHIATRY.

AN EXTRAVAGANT FRAUDULENT CHARGE OF RAPE.
—The *Gazetta medica lombarda* for February 20th, citing the *Grece medicale* of unknown date records an extraordinary case: A beautiful young girl of eighteen was brought by her parents to the crown prosecutor and entered a complaint that early that day a young man to whom the girl was attached had violated her. She prayed that he should be compelled to marry her. The crown prosecutor ordered Dr. Gagis and Dr. Mantzovinos to make an examination of the accuser's person to establish the fact of the crime. No traces of violence were found, or of the struggle which, so the girl asserted, had taken place between herself and her violator; but the doctors found blood upon the girl's drawers and chemise. The external genitalia were sanguineous and slightly reddened, the hymen ruptured and bleeding. However, in view of the discrepancy between the girl's

statement of her struggle and the absence of any marks of violence, and in view of the evident fact that she had not been narcotized, the doctors became suspicious of fraud and were led to the belief that the defloration had been artificially produced with the object of accusing the young man, which opinion was strengthened by the girl's mental state. They therefore proceeded to a vaginal examination. In the vagina they detected an ovoid body, smooth and movable. In attempting to remove it, it broke, and from the colored material that ran down the girl's thighs they recognized that they had broken a hen's egg. It transpired that the girl's parents, knowing that the young man had declined a marriage, had adopted this means, after a family council, to consummate their desires.—*New York Medical Journal.*

VISIONS.—Morton Prince of Boston, in an experimental study of visions, published in the winter number of *Brain*, has deduced some interesting points about visions. His experiments were made upon a hysterical neurasthenic, in whom he was able to establish three personalities, or three conscious states, by hypnosis. Prince divided the visions produced into those of conscious or unconscious visual experiences, those newly created from past experiences not visual but from some other sense experience, and those without known past experiences. The visions did not confine themselves to the one class; frequently two classes were associated at the same time. Probably, as Prince contends, Joan of Arc and many other religious enthusiasts had read or heard of some particular act or scene, and then in their own way created some individual visual interpretation of it; this in turn served as a basis for the vision. All possible combinations may exist, so that it may be quite impossible to define any particular thing to which one can directly trace the vision. This fact is very suggestive in the possible explanation of many dreams, which at times seem never before to have figured in one's experience. The condition may be made to cover the hallucinations of sight and hearing of the clairvoyant and trance medium. Such studies give us many medico-legal points in the disordered consciousness of epileptics, where passing thoughts in the

normal state become the criminal acts in the so-called psychic attacks. From Prince's study we infer that ideas long sought for and dwelt upon may ultimately appear to the prophet or genius of arts as inspirations.—Abstract of editorial in *Journal of American Medical Association*.

A CASE OF MYSOPHOBIA.—This patient is 54 years of age, moderately well nourished, quiet in her movements, not emotional, at least she has perfect control over herself.

A vague history of nervousness on the part of a brother. No evidence of mental diseases in relatives. Mother and sister had cancer. Patient is the mother of three children, grown to maturity and in good health. Thirty years ago there was considerable nervous disturbance, which promptly subsided with birth of child, the third which she had borne in rapid succession. This pregnancy was unwelcome and caused mental anxiety and worry. Menopause without any nervous disturbance ten years ago.

The pulse 90 to 110, heart and lungs sound, tongue slightly coated. She is rather constipated, urine negative. Pupils are equal, reaction normal. Ophthalmoscope discloses no retinal congestion. Her appetite has been poor most of the time since the beginning of the trouble. Never sleeps more than an hour or two at a time, and frequently unable to sleep at all during the whole night. Is constantly haunted by a sense of impending calamity.

Patient's home is in the country and her husband is a farmer in fairly good circumstances. She has always found the solitude of the farm trying to her, for she is fond of associating with her fellows. A married daughter lived near her for many years, but recently the daughter removed to a distant place, and the mother missed the daughter's company very much. The husband, too, had grown very deaf, making conversation with him very difficult—so difficult that nothing beyond what was absolutely necessary was said to him. This increased patient's loneliness and added to her mental depression.

Present trouble had its origin in the fact that the man to whom patient's husband had rented a farm had a cancer somewhere about the neck, and another person, a woman

who lived on a neighboring farm, also had a cancer. Both of these had been operated upon by a surgeon from Chicago, and the woman died. Did not her mother and sister have cancers and was she not thus predisposed? Besides, did not the man to whom the farm was rented live near by and was not the air filled with "cancer microbes" from his cancer? Then she remembered that this man's children, and others who had been in his house, had also come in her house, and what was there to prevent the carrying of cancer microbes? So she spent a great deal of time in washing and scouring everything with which they came in contact, and her life became utterly wretched through fear of contamination. She sent for the local physician, and he took her temperature by putting his clinical thermometer in her mouth, and, after he left the house, she thought that he too might be a carrier of microbes, for doctors, too, had been known to carry contagion in their clothes; but when she recalled the thermometer, and that it had undoubtedly been in the mouths of those afflicted with cancer, she almost fainted with fright. Two or three little mucous ulcers appeared at the exact site touched by the instrument, and it took a great deal of persuasion on the part of the doctor to convince her that she did not have a cancer.

While thus engaged in combating the "cancer microbes," the patient received a visit from a young woman living at a distance from her own home. Circumstances made it necessary that the guest should remain over night, and she was given a good bed with an abundance of fine bed-clothing. After the departure of her guest the patient's mind began to dwell upon the old subject of "cancer microbes," and she cudgeled her brains to discover whether her departed guest might not have been the means of introducing them into her house. In this she failed only, however, to make a still more disquieting discovery. She recalled with horror that the family of her transient guest had, more than twenty years ago, had several of its members afflicted with smallpox. She burned every article of bed-clothing, piece by piece. The mattress she could not put into the stove whole, so she asked her husband to cut

it up so that she might burn it. To this he demurred, but agreed to carry it out of doors, and the patient spent a laborious day, with a quart of spirits of turpentine and a swab, thoroughly disinfecting every part of it.

Within doors the patient's efforts were redoubled. Everything was washed with carbolic acid in solution and the rooms of the house repeatedly fumigated with sulphur.

Sometime after the onset of the disease patient received a visit from her daughter; but, instead of being persuaded that her fears of contamination were groundless, a result which the daughter sought to accomplish, the efforts of the mother were redoubled, for did she not now have the added responsibility of preventing the cancer infection of her beloved daughter? Unknown to the latter, the mother literally spent hours in scouring the dishes, knives, forks and spoons, and in washing the table and bed linen—all to protect her daughter from "cancer microbes."—By John Madden, M. D., Professor of Physiology in the Wisconsin College of Physicians and Surgeons, Milwaukee, Wis., in *Journal of Scientific Medicine*.

CLINICAL NEUROLOGY.

DIFFERENTIATION IN MULTIPLE NEURITIS.—In polyneuritis, differentiation is possible. Polyneuritis alcoholica and tuberculosa are difficult to individualize. (1) Polyneuritis of alcohol gives paralysis of extensor muscles of the lower extremities, increased patellar reflex, hyperesthesia and trophic disturbances of skin and nails, slight atrophy of muscles, reaction of degeneration. Prognosis good. (2) Tuberculous polyneuritis; analgesia of upper extremities, paralysis-like weakness and atrophy of the muscles of hand. Lower extremities affected late. (3) Polyneuritis after diphtheria eight to fourteen days after disappearance of diphtheria, more frequent in adults than in children. Muscles of the soft palate, lips, cheeks and the tongue usually affected. Next muscles of the lower extremities, then upper, then neck. Tremor, seldom pain absent.

The skin is anaesthetic. Dizziness, strabismus, failure of vision, or ptosis may co-exist. The prognosis good. (4) Plumbic polyneuritis: Upper limbs are first affected. Pain, early muscular tremor in forearm, shoulder or arm. The extremities cold to touch; the reflexes are diminished or absent. Diaphragm of the intercostals may be involved. (5) Polyneuritis of leprosy; severe pain, anaesthesia of extremities and face; paralysis and muscular twitching of upper limbs, "claw"-position of the hands; sometimes trophic disturbances with perhaps the loss of nails or fingers. (6) Polyneuritis due to carbon-monoxide: Signs of the poisoning. Severe skin and muscle pain, motor disturbances. (7) Polyneuritis from malaria: Lower extremities painful and lame, the reflexes diminished, coldness, touch intact. (8) Polyneuritis from typhoid: Muscles of the face and arms unaffected, the lower extremities are paralyzed and painful. Trophic changes slight. Prognosis good.—Dr. Verrier, *La France Méd.*, Jan. 13, 1899.

TRAUMATIC HEMORRHAGE INSIDE AND OUTSIDE THE SPINAL COLUMN.—At the Moscow Congress, Stolper of Königshutte stated that, from personal researches (20 recent necropsies) and the reports of numerous autopsies in the workmen's hospital at Königshutte. That some myelopathies commence by hæmatomyelia, as the author's 94 cases of fracture or dislocation of the spine prove. It is especially in those affections whose symptom-complex resembles that of syringomyelia that the author is convinced hæmatomyelia is the primitive cause.

RESEARCHES ON TRAUMATIC AFFECTIONS OF THE SPINAL CORD.—Dr. L. Minor of Moscow at the same congress stated that in grave cases of traumatic affections of the cord (following fractures, luxations, etc., of the vertebræ) we may generally find two kinds of foci—local and localized. The local is found directly under the bony lesion and consists of a simple mechanical destruction (contusion, laceration) of the medullary substance. The localized is found above and below the local. This variety generally occupies the central gray substance of the anterior and pos-

terior horns and consists of an accumulation of blood forming a hæmatomyelia. We may also find fissures and cavities in the same regions. In some cases of hæmatomyelia with destruction of the central parts, the central canal is generally opened and enlarged (tendency to hydromyelia), and the peri-ependymal cells proliferate (beginning gliosis). The clinical phenomena are manifested (in addition to lost patella's reflex) by a zone of analgesia and of thermo-anæsthesia.—*Ibid.*

BIOLOGICAL CONDITIONS OF THE PARENTS OF EPILEPTICS.—The author, (Dr. Gaston Bechet, Archives de Neurologie, March, '99) investigated the family history of forty epileptic patients, and compared their statistics with the figures given for normal families in a similar investigation carried on by Ball and Regis.

The results are tabulated under four heads:

1. *Longevity.* In the grandparents the length of life was rather greater than that for normal families, showing an average of sixty-nine years for epileptic families against sixty-five years for normal. Of the parents thirty-seven were still living, and the average at death for the remaining forty-two was fifty-seven years.

2. *Fecundity.* The number of children born to the grandparents was considerably larger than for normal families, showing an average of seven and sixty-two one-hundredths to each epileptic family as against four and thirty-eight for the normal. The children born to the parents averaged six and twelve one-hundredths; the number for normal families is not given.

Of these forty epileptics twenty-six were married, and their children showed an average of one and sixteen one-hundredths per family as against a normal average of two and seventy-three one-hundredths.

3. *Vitality.* The vitality of the parents of the epileptics compared favorably with that of normal individuals:

	Dead.	Living.
Parents of epileptics.....	.53.16%	46.83%
Parents of normal.....	57.5 %	42.5 %

Of the brothers and sisters of the epileptics forty-two

per cent had died. The age at which these deaths occurred showed a marked variation from the normal, since eighty-six sixty-five one-hundredths per cent occurred under the age of twenty years, while in normal families but sixty-six sixty-seven one-hundredths per cent of the deaths occur below this age.

4. *Disease.* The causes of the 411 deaths which had occurred in the four generations were as follows:

- a. Respiratory diseases, 136; (Phthisis, 53, occurring mainly in the ascendants); b. Old age, 98; c. Cerebral and spinal diseases, 84; d. Neuroses and insanity, 11.

This last figure is in contradiction to the figures of Ball and Regis, who place the frequency of nervous affections next to that of the pulmonary.

The author draws the following conclusions:

1. The longevity among the ascendants is less than that of normal families.
2. The average of births for the families is greater than the normal, but among the individuals epilepsy tends to sterility.
3. The vitality is less in epileptic families, a much larger proportion dying in early years than in normal families.

4. The frequency of the different diseases presents very marked characteristics. Pulmonary troubles (phthisis in particular) are very common among the ascendants; cerebral troubles (meningitis in particular) occur frequently among the descendants. The neuroses and insanity are, according to these investigations, remarkably rare in the families of epileptics. These results confirm the well-known opinion of Laseque that epilepsy is not hereditary.
—W. A. Jones, excerpt in *Medical Dial.*

A CASE OF DISSEMINATED SCLEROSIS WITH UNILATERAL TREMOR.—Reported by Dr. Paul Remlinger, *Revue de Medicine*, March, '99) translated by Dr. Jones for *Dial*: The patient, a well developed man, a tailor by trade first noticed a feeling of fullness and formication in the right upper extremity, which was followed later by steadily increasing tremor. The right lower extremity became

involved in the same order, and a year or two later the lower lip showed similar symptoms. The tremor was intentional, and entirely disappeared on rest. While plainly marked on the right side, there was absolutely no tremor even on fatigue on the left side. Careful measurements and tests showed entire absence of atrophy, muscular weakness, or disorder of sensation the affected side. Hysteria was excluded after failure to find any of the ordinary stigmata. Other symptoms present were exaggeration of the tendon reflexes on both sides, but more markedly so on the right; considerable diminution of the keenness of vision, due to optic neuritis; and a very slow, drawling, and monotonous speech. When last seen, nearly six years after the beginning of the trouble, the patient was beginning to complain of a sense of fullness in the left arm, and it is possible that tremor will eventually appear on the left side.

FEAR NEUROSIS.—Prince (*Boston Med. and Surg. Jour.*, Vol. CXXXIX., Dec. 22, 1898) finds this peculiar condition very common among musicians. It is usually considered a manifestation of timidity, but while it may originate as such, it persists as an automatic physical neurosis. The physical symptoms of fear are presented without the emotion. It is a phobo psychosis. The predisposing cause is fear, the result of natural timidity, which, by repetition, becomes a true habit neurosis, and while the psychical emotion subsides with increasing experience and years, the physiologic manifestations persist. After the full development of the neurosis, apprehension and excitation by public performance fill the role of an exciting cause. The symptoms of the neurosis are consciousness of being observed, faintness, perspiration, flushing of the face, confusion of thought, depression. In some cases there is desire for evacuation of the bowels. The condition is not one of neurasthenia, and in the treatment of cases this must be forcibly impressed upon the patients. Suggestion, either with or without hypnotism, and the artificial creation in the mind of the subject of a fixed idea in line with truth, and antagonistic to the morbid idea, are important parts of treatment.—Abstracted by Spiller & McConnell *International Medical Magazine*.

LIKE THE FAMOUS TAMPING IRON CASE.—Barrett (in the *Lancet*, January 7, 1899), gives the details of the case of a lad, aged fourteen, who, while ramming a muzzle-loading gun with a thirty-inch iron rod cocked and capped, jarred the gun and brought down the hammer and discharged the piece. The ramrod which measured $\frac{5}{8}$ inch in diameter at its big end, passed point into the boy's forehead over his left eye, and out of his left parietal bone. He walked 200 yards to the house, and rode three miles to a hospital. In three weeks his wounds were so sufficiently healed to permit his going home. There was a discharge during convalescence of a thimbleful of bits of gray matter of the brain. Aphasia and partial paralysis of the right arm followed the accident but gradually disappeared.

RELATION OF THE TOXICITY OF THE URINE AND BLOOD TO EPILEPSY.—Dr. C. A. Herter said that Haig had claimed that uric acid was the actual poison which caused the epileptic paroxysms, but certainly this view was a very extreme one. In the first place, it had never been shown that uric acid, in the quantity in which it existed in the body, was a poison, and although the quantity of uric acid in the urine was almost always increased after the seizure, it was probably to be attributed to some central change in the intestinal secretion. The French had made much of the toxicity of the urine in connection with the subject of epilepsy. Their experiments had been based on the introduction of urine into rabbits, but this method was exceedingly inaccurate because the toxicity of the urine depended very largely upon the quantity of mineral salts present, and unless the quantity of these substances present was known, nothing definite could be said about the toxicity of the urine. He had personally never advocated the doctrine that there was a specific relationship between the increase in the ethereal sulphates and the occurrence of epilepsy, as this increase was observed in a great many cases in which intestinal indigestion was present. Perhaps the most interesting phase of the subject was that dealing with the toxicity of the blood, and its relation to epileptic

seizures. It was only by the greatest care that reliable results could be obtained from the experimental injection of serum into rabbits. He had examined the blood from eighteen cases of epilepsy, and he could say that in fifteen of these there had not appeared to be any special toxicity of the blood. It was quite possible that the increase in the toxic properties of the serum might result from disturbance of digestion.

EPILEPSY AND INSUFFICIENCY OF THE EYE MUSCLES.

—Dr. David Webster said that a number of years ago he had been appointed on a committee to investigate the claims of Dr. George T. Stevens regarding the causation of epilepsy by insufficiencies of the ocular muscles. In the presence of the committee Dr. Stevens had examined and operated upon the muscles of several epileptics. In most of the cases there had been at least temporary improvement. The neurologists on the committee believed that none of these cases had been cured, and if, he recollects correctly, the report of the committee had been to that effect. It should be said, however, that Dr. Ranney had published a book in which he had cited a great many cases that had been cured in this way. Personally, he had never seen in his own practice a cure of this kind. He had met with many patients upon whom these tenotomies had been done, and who had been far from well. When there was a tendency to deviation of the eyes it should be corrected as nearly as possible, but exact correction was impossible, even in the hands of the most expert.

EPILEPSY AND OÖPHORECTOMY.—Dr. Egbert H. Grandin expressed his surprise that the reader of the paper had been able to find a gynæcologist in New York City who had been guilty of ablating the normal ovaries in recent times. There could be no question that fifteen years ago, when gynæcology had been in the formative stage, many apparently healthy ovaries had been extirpated, but he did not believe any gynæcologist of repute at the present day would do such a thing. Ovarian disease could influence only idiopathic epilepsy by aggravating the con-

dition. The speaker cited two cases in which the diagnosis of epilepsy had been made by experts. One of these cases was that of a young girl, whose intellect had been developed entirely out of proportion to her body. The attacks had been very violent, and had been very much worse at the menstrual periods: For this reason he had consented to remove the ovaries at the urgent request of the parents. He had found infantile and cirrhotic ovaries, and had extirpated them. For about eighteen months she had had scarcely any seizures, and since then there had no longer been any exacerbation each month. The other case was the wife of a clergyman, and she had had pyosalpinx on both sides and a degenerated ovary on one side. He had operated upon her because of the disease of the appendages, but her epileptic attacks had been in no way benefited thereby.—*Medical Record*, Medical Society County of New York.

TYPHOID FEVER AS A CAUSE OF EPILEPSY.—A writer in the *Revue de Médecine* for February, M. Dide, considers the part that may be played by typhoid fever in the ætiology of epilepsy. It appears from a summary of his article in the *Indépendance Médicale* for March 29th that his observations go to show that typhoid fever not infrequently evokes epilepsy in persons of a neurotic predisposition, and, furthermore, that if it is severe enough it occasionally gives rise to epilepsy in those who are free from such a tendency, so far as can be observed.—*N. Y. Medical Journal*.

[We have so observed.—ED.]

MULTIPLE SCLEROSIS FROM TRAUMA.—Leick (*Deutsche Medicinische Wochenschrift*) reports a man 34 years of age, struck on the head and unconscious four hours, with severe hemorrhage from mouth and nose. On recovery of consciousness, right leg and arm could be moved slightly, left immobile and sensibility greatly lessened. He rapidly improved, and with the aid of a cane walk, with left foot only dragging. There was horizontal nystagmus, bilateral fixation, speech slightly nasal, but not scanning. Occasional slight tremor of the arms, and fibrillary twitchings

of body and bradial rigidity. Tendon reflexes were greatly increased, with clonus. No intention-tremor, but ataxia on movement, with closed eyes. Gait spastic and ataxic. Romberg's sign but no altered sensation, simply minus feeling. The organs generally were normal.

Spastic spinal paralysis was excluded from the diagnosis because of the existence of nystagmus and Leick diagnostic Multiple Sclerosis.

INFLUENCE OF TYPHOID FEVER ON EPILEPSY.— In the *Revue de Médecine* for February 10, 1899, Didé has contributed an interesting paper upon this subject in which the well known fact is pointed out that the oncoming of an infectious disease often produces convulsions of an epileptiform character, and on the other hand that the development of an acute infection may indefinitely postpone symptoms of a chronic malady which have previously been frequent in their occurrence. Thus in epilepsy, in the earliest stage of onset the convulsions are apt to be increased in frequency and severity but as the disease progresses they become less severe and less frequent, so that by the time the illness is well developed, the ordinary convulsions cease and remain absent for so long a time during convalescence that both the patient and his friends are cheered with the belief that his severe acute illness has been a blessing in disguise. Unfortunately, only too frequently it is but a temporary remission, produced perhaps by exhaustion of the nervous centers, and no sooner is perfect health restored, at least so far as the typhoid infection is concerned, than the epileptic paroxysms return with a vigor equal to that manifested before the acute illness. Didé believes that the convulsions which occur during the early stages of the disease are the result of the toxemia. In those cases of epilepsy which seem to arise for the first time as the result of an attack of typhoid fever, he thinks that they are due to cellular changes produced in the nervous centers by the action of the poisons developed during the course of the disease.—Editorial in *Journal American Medical Association*, May 13th, 1899.

EPILEPSY WITH LESION OF UNCINATE GYRUS.—The symptoms that give us the strongest aid toward defining cerebral function are the aura and the order of muscular invasion of an epileptic fit. An illustration of the great interest to be derived from the study of such matters is well displayed in the case of epilepsy reported in the winter number of *Brain*, by Jackson and Colman, in which there was a fairly constant tasting movement and "dreamy state" in the epileptic fits, which at times constituted the entire attack. At autopsy a very small patch of softening in the left uncinate gyrus was found. Champing movements of the jaws, and an appearance of tasting are seen in mild epileptic fits, and in fact may constitute the entire attack of epilepsy in rare instances. But few of these cases have shown the result at autopsy that Jackson and Colman report. No lesion was found in their case except in the left uncinate gyrus, which is Ferrier's taste region. As far as the observer's report goes, it appears that the epileptic phenomena preponderated on the right side. Jackson and Beevor also recorded a similar case in 1899, which presented a tumor in the right temporosphenoidal lobe. Jackson placed on record a very suggestive class of epilepsies known as uncinate group of fits, in the *Lancet*, Jan. 14, 1899. It is a matter of extreme regret that this case of epilepsy of the taste region did not come to autopsy early enough to get the specimen in proper preservation for future microscopic study.

TABES DORSALIS WITH BULBAR PARALYSIS.—M. Bloch (*Neuroglische Centralblatt*, April 15, 1899) reports a case of this in a rare combination. The patient is fifty-five years old and is a teacher. No hereditary history, no excesses of alcohol or tobacco, no syphilitic infection. No special trauma, nor does his profession demand any excessive physical exertion. P. is married and has two healthy children; two have died at an early age. His wife has had one abortion.

His sickness began eight years ago with lightning pains in the legs, weakness, girdle sensation, paresthesia in the hands. In 1893 paralysis of the muscles of the right eye,

with double vision; since 1896 progressive decline in the sharpness of his sight. Atactic condition marked in the upper extremities. One year ago P. complained of a feeling of numbness in the right half of the tongue and of the right side of the face. Saliva flowed from the corners of the mouth. The patient could not swallow normally, and fluids often came through the nose.

The apex beat is heard best in the sixth intercostal space, heaving and broadened. At the apex a soft systolic and diastolic murmur. Over the sternum a loud systolic murmur and a diastolic blowing. In the right second intercostal space a dullness of about the size of a fifty-cent piece. Pulsus celer. Right eye, incomplete ptosis; pupils do not react to light. Right eye, complete paralysis of the abducens. Rectus. sup. internus left, complete paralysis of all the eye muscles.

Ophthalmoscopic Examination gives the typical white degeneration of the optic nerve. Anesthetic areas in the region of the fifth nerve. The speech is a typically bulbar-nasal, hoarse, monotonous. Marked paresis of the facial on both sides. Lips are thin. The mouth is held half open and the saliva drips continuously from the corners of the mouth. The tongue moves to the right on protrusion. The muscle is thin, flaccid, and shows febrillary twitching.

Laryngological Examination.—Sensibility of the pharynx somewhat diminished. The right vocal cord shorter and smaller than the left and less tense. Glottis smaller than normal. Abduction follows almost to the middle line, with the exception of a small oval space of the right cord. Abduction of the right vocal cord entirely lost, while the abduction of the left is normal.

Diagnosis.—Right posticus paralysis with conservation of the superior laryngeal. Hypalgesic in the right ulnaris. The gait is atactic. Right patellar reflex can be obtained by reinforcement. The electrical examination of the tongue and lip muscles give slight change of quantitative reaction; no qualitative change.

The interesting points brought forward by Bloch in this case are: the coincidence of aortic disease with tabes and

the bulbar symptoms. He considers the laryngeal condition as a part of the tabes and not to be taken in connection with the bulbar paralysis.

SPINAL-CORD DISEASE PRESENTING UNUSUAL SYMPTOMS.—Dr. Leszynsky reports the case of a man of thirty-five years of age, who had been in perfect health up to June, 1896, at which time he had fallen from a considerable height, striking on his buttocks. Immediately afterward he had been paraplegic, and had no control over the bladder and rectum. There was now incomplete paraplegia, with slight spasticity affecting the adductor muscles on both thighs. There was a loss of the pain sense and the temperature sense, with preservation of tactile sensibility. At one time this had been supposed to be characteristic of syringomyelia, but it was now known to occur in connection with several other disorders. The most unusual feature in this case was the absence of the knee-jerk and the presence of ankle clonus. The speaker said there had been only twelve cases reported in which this condition had been observed. If the ankle clonus were looked upon simply as an exaggeration of the Achilles reflex, the matter would be simplified a good deal. This patient also presented an extremely rare condition, *i. e.* a gluteus medius clonus. The man had evidently had a haemorrhage into the spinal cord in the lumbar region, which had resulted in the cutting off the reflex arc of the knee-jerk. Below this point the haemorrhage had done no harm, and the descending degeneration had taken place in the lateral columns of the cord.—*Medical Record*, April 1st, 1899.

POST-EPILEPTIC-ALBUMINURIA.—Galante (*Rif. Med.*, April 26 and 27, 1898) has examined the urine of sixteen epileptics (14 male and 2 female) free from cardiac or vascular lesions, with a view to determining the presence or absence of albuminuria after an attack. The urine was withdrawn by catheter immediately after an attack, and the albumen estimated quantitatively by Scheier's method. In every case albumen was found, varying from 2.04 g. to 0.25 g. per cent. In two cases, after very violent attacks,

a few hyaline casts were seen. The albuminuria lasted from four to twelve hours. If there had been pre-existent albuminuria the amount was always increased after a fit. There was a constant relation between the amount of albumen and the amount of indican observed in the urine. Assuming that albuminuria is due to some renal epithelial change of a temporary and fugitive nature in epilepsy, the author points out several factors in the epileptic attack likely to induce such changes in the renal epithelium—for example, the circulatory disturbances caused by the convulsive spasm of the thorax, the increase in autotoxins found in the blood, the intense muscular work done in the fit, and lastly the concentration of the urine from excessive perspiration.—*Ibid.*

THE PERCEPTIVE PROPERTIES OF THE HAIR.—Von Bechterew describes a new instrument for measuring the perceptivity of the hair—the electric trichoæsthesiometer. There appears to be a practical field for the instrument, as the author is satisfied that perception by the hair amounts almost to a special form of cutaneous sensibility, in that it differs radically both from ordinary tactile and general sensibility may not be subjected to any alteration.—*Neurologisches Centralblatt*, November 15, 1898.

MERALGIA PARESTHETICA.—Sabrazès and Cabannès (*Rev. de Med.*; *Brit. Med. Jour.*) give an account of the literature of this affection, and report a case. It occurs more frequently in men than women. The cause of the disease is not always apparent. The chief symptom is an abnormal sensation on the antero-sexual aspect of the thigh in the distribution of the femoro-cutaneous nerve, felt during rest as well as on standing or walking. This sensation may be converted into one of more or less severe pain under certain circumstances. Most often the sensation consists of numbness, accompanied or not by formication. Slow rapid, or prolonged walking or standing may bring on the attack. Usually it is arrested by sitting down for some minutes. The left side has been more frequently involved than the right; occasionally it has been bilateral even from

the commencement. The paresthetic zone extends from the anterior superior spine to the external condyle. Sometimes it occupies patches only. Sensation is variously affected. The hypesthesia and hypalgesia is often partial. This objective disturbance of sensation is a prominent symptom in the case. This meralgia is usually a disease by itself, but tabes and diabetes have been noted as causes. The affection may undergo spontaneous cure. Treatment gives variable results. Massage and electricity have been found useful; rest is essential. Resection of the nerve might be advisable in inveterate cases. The femoro-cutaneous nerve is usually derived from the second lumbar. The diagnosis is generally easy; it must be distinguished among other affections from hysteria. Bernhardt would look upon the disease as a neuritis of the femoro-cutaneous nerve associated with an infective illness (enteric fever), with an intoxication, or with tabes, or due to the action of cold. The femoro-cutaneous nerve is superficially placed, and hence is, according to some authorities, exposed to traumatism. The authors themselves regard the disease as a more or less profound neuritis of the femoro-cutaneous nerve which may be caused by direct traumatism. The position of the nerve exposes it not only to direct injury, but also to stretching and to congestive accidents. This change in the nerve may also be associated with an infection, intoxication, or a disease of the central nervous system.

NERVOUS SYMPTOMS OF MOVABLE KIDNEY.—In the *American Gynecological and Obstetrical Journal* Dr. Gustavie Futterir writing on the symptoms and diagnosis of this condition includes: Pain in the neck; dizziness; gastric symptoms, indigestion, cramps, vomiting, flatulency, palpitation, irregular heart action and destruction and throbbing of the abdominal aorta; neurasthenia, trembling, dizziness, headaches, occipital or frontal, and deep depression; frequent urination, at times painful, and in some cases albuminuria and hydronephrosis; kinking of the renal artery, and in rare cases œdema from compression of the vena cava inferior.

Diagnosis is to be made by the above symptoms and by feeling the kidney out of its normal situation. And the above detail of symptoms show its diagnosis is largely to be made on neurological truths aside from the revelation of palpitation.

MEDICO-LEGAL PSYCHIATRY.

A CASE OF TRANSITORY INSANITY.—A man aged forty-one years, who had been ailing and somewhat low-spirited for two weeks, became, while at work one morning, suddenly and violently insane with constant motor activity and muttering delirium. The attack terminated abruptly in eighteen hours. J. H.—, a laborer, aged forty-one years, single, was admitted to the Allegheny General Hospital, November 4, 1898, in a condition of furious delirium, where he was first seen by Dr. Price, the house physician, who obtained the following history. His mother died of phthisis. There was no family history of any nervous trouble. He had had rheumatism and "chills and fever." He had been addicted to the excessive use of alcohol, especially recently. For about two weeks before admission it had been noted that he was low-spirited. He complained of general bodily aches, headaches, burning of eyes. He supposed that he had "chills and fever," and took large quantities of whiskey and quinine to remedy it.

He had a scar on the left temple, the result of an old injury. In cold weather or after excessive alcoholic indulgence or a cold he has throbbing and burning in the scar. He had never previously been insane. He had been working steadily and was at work on the morning of November 4th, when he became suddenly and violently insane, just after feeling dizzy and chilly. He was at once taken to the Allegheny General Hospital. The delirium was at first wild and furious, and later became muttering and incoherent. Along with the constant muttering of words and phrases, thoroughly incoherent, there was ceaseless motor activity. There were sordes on the teeth and the tongue was dry.

An attempt to pass the stomach tube caused a violent convulsive attack. Examination failed to reveal disease of heart, lungs, or kidneys. The temperature was 99 degrees, pulse 100.

About 4 A. M. the next morning the patient's mind cleared up quite suddenly. He complained of feeling sore and stiff, but had only a very indistinct recollection of his conduct during the attack. After the attack, the patient was kept in bed ten days. He complained some of dizziness. His reaction time to mental stimuli was slow for a few days, but subsequently became normal.

On November 13th, the patient had some restlessness and delirium lasting several hours. He was subsequently discharged from the hospital apparently feeling quite well. There was no rise of temperature above 99 degrees at any time.

Remarks: The attack of insanity began suddenly, lasted about eighteen hours, terminated suddenly, and presented the symptoms of acute delirious mania (typhomania) except that there was no rise of temperature.

Cases of this kind have always some interest from the medico-legal point of view. Suppose this patient at the outbreak of his insanity had committed murder. Could it have been shown that the murder was the act of an insane man; or would it have been argued that the crime produced the insanity?—Theodore Diller, M. D., in *N. Y. Med. Record*, May 20, 1899.

NEURO-SURGERY.

DRAINING OF THE FOURTH VENTRICLE.—A girl, aged thirteen years, with history characteristic of congenital syphilis, marked temporary relief followed the operation.

The first symptoms of the disease for which the operation was made were headache and pain in the back. Emaciation became extreme, in spite of a ravenous appetite. The head was retracted; pupils dilated, and blindness, whether from the disease or from inattention could not be

made out, came on. There was paralytic distension of the bladder, and the urine contained pus and albumen. Pulse varied from 102 to 120, and the temperature was irregular, sometimes going as high as 103°. No pain except from a bed sore was complained of. Legs and arms were almost paralytic. A corneal ulcer appeared, but healed, to reappear a few days before death. Later external strabismus and nystagmus of the right eye manifested themselves. Dysphagia became more and more marked. September 7, she was much cyanosed, had rigors and appeared to be dying. As medical treatment had been unavailing, surgical measures were resorted to. Under chloroform narcosis, the retraction of the head disappeared. The patient being laid face downward, a horseshoe-shaped incision was made from mastoid to mastoid, the highest point being just below the occipital protuberance. The soft parts were dissected down to the foramen magnum, and an opening made just above it with a three-quarter inch trephine. The dura bulged into the opening, which was enlarged with the bone forceps. The dura and thickened arachnoid were opened, the medullary tonsils separated and more than ten ounces of clear cerebro-spinal fluid evacuated. The parts resumed their normal relations; the dura was left unstitched, no bone was replaced; the soft parts were brought together by interrupted suture. The patient stood the operation well, and soon asked for food. The temperature fell to normal, and remained so for four days, after which it became irregular. Cerebro-spinal fluid exuded in large amounts, soaking the dressings two or three times a day. After the stitches were removed, the fluid collected beneath the scalp, causing it to bulge; later a sinus formed.

Death occurred three weeks after the operation, not as a result of the latter, and autopsy revealed the existence of basal meningitis and abscess of the kidney. Mr. Stiles, who detailed the steps of the operation, also enumerated the recent cases in which operation has been done for the relief of intracranial pressure, thirteen in number, with five reported as cured. In the subsequent discussion other cases were referred to, and it was agreed that the method of

draining the fourth rather than the lateral ventricle, was preferable, and that in nontubercular meningitis it afforded a chance of relieving the pressure symptoms and possibly of effecting a cure.—Dr. Alexander Bruce (in *Lancet*) read a paper before the Edinburgh Medico-Chirurgical Society, January 19, 1898, on “Draining of the Fourth Ventricle for Acquired Hydrocephalus.”

EDITORIAL.

[All Unsigned Editorials are written by the Editor].

Psychosis and Sycosis.—The dermatologists are discussing the propriety of abandoning the term sycosis and substituting dermatitis barbae therefor and we are quite in accord with them, since the neurologic term, psychosis, now so often used in connection with the term neurosis, has become so common.

Pullman Company Blamed for Consumption Contracted in a Car.—J. M. Edmonson, a prominent attorney of San Antonio, Tex., formerly of Dallas, has sued the Pullman Palace Car Company in the United States Circuit Court at El Paso, Tex., for \$15,000 alleged damages. The plaintiff's grounds for the suit are somewhat novel. He claimed that while journeying in a Pullman car from San Antonio to Denver he was drenched with rain water through a hole in the roof while asleep in his berth. From the effects of the wetting he says he contracted a severe cold, which resulted in consumption.—*Railway Surgeon.*

We are inclined to think that the plaintiff in this case will have a rather difficult task to establish his claim. It seems to us that to prove that a severe cold will result in tuberculosis of the lungs is far from being an easy matter. No doubt the plaintiff has read the advertisements of quack catarrh doctors, and has thus been led to enter his suit.—*St. Louis Medical and Surgical Journal.*

We think the plaintiff has a good cause if he can prove either that the car contained tubercle bacilli (often not a difficult matter under proper microscopic inspection) or about his person, for tubercle bacilli which do not readily take hold of vigorous, comparatively immune organisms may fasten upon a system debilitated by the fever and vital depression of a cold. The hole in that car roof and the rain-pour through on a sleeping passenger may have depressed the sleeper to the degree of inadequate vital resistance. The part the nervous system plays in resisting and of vio-

lence done to it in impairing resistance to the invasion and victory of microbic infection must not be overlooked in solving the question of tubercular infection. There is a constitutional condition as well as a *punctum minoris resistentia* brought about by depressing shocks to the central nervous system through peripheral impression.

How Hospital Treatment Differs from that of General Practice with the Insane.—In this, says Dr. Orpheus Evarts, it effects a complete change of environment by which the patient has long been influenced; takes possession as it were of the incapable who have lost self-control and re-adjusts their habits so as to not only permit, but aid nature to recover lost advantages in the great struggle for existence and physiological integrity. Of other than these practices, and a better understanding of the insane from observation and study, hospital physicians have nothing to boast of over general practitioners, no other secrets to disclose.

A Precocious Erotic Degenerate has come before the public of Good Ground, Long Island, in the person of young Joseph Squires, a fifteen year old pupil who fell violently in love with his school teacher whose eroto-manical wooing won reciprocal affection from his comely teacher, Miss Decker, many years his senior. No indiscretion appears in the evidence as chargeable to the young woman except that she succumbed to the lad's erotic importunities and went with him to the parson to be married to him.

The boy's conduct and letters were intensely passionate and jealous, ending in suicidal attempts. He is said to sit at his window all day long gazing longingly at the window opposite where his lady love was wont to stay. The boy is said to be morally reckless as to veracity, having sought to blacken the character of Miss Decker and is described in the language of newspaper psychology as a callow youth who made love with the impetuosity of a real son of Mars and told about it with the craven duplicity of a degenerate."

The Study of Morbid Erotism and the analysis of degenerate morbid erotists will some day be understood by the public as the degeneracy of alcoholism and other neuro-psycopathic states is being now comprehended by the people. When the excesses, as wise men and wise women are becoming now in regard to alcoholic and religious emotional excess. That is a singular expression in the Book of books—"the parents have eaten sour grapes and the children's teeth are set on edge." Vicious indulgence

in parents to the degree of physiological degradation appears in their descendants in degeneracy and maniacal perversion.

Age in the American Army.—Old men for counsel and young men for war does not apply to American army and navy leadership. Dewey was 61 when he destroyed the Spanish fleet at Manila, and Farragut 64 when he fought at Mobile Bay. Scott and Taylor were old men when the Mexican war came on. On the Confederate side of the Civil War, Lee, Sidney Johnston and Joseph E. Johnston were all beyond 50. Gen. Wheeler is 62, and Lee, now in Cuba is over sixty. The surgeon-general and many of the officers killed or wounded at Santiago and in the Phillipines were gray-haired veterans.

The Lancet on Sausage.—This sober scientific periodical says that "the composition of the sausage is not only complex, but is often obscure." Which constrains one of our local newspapers, the *Globe-Democrat*, to remark that "Artemus Ward could have raised a laugh with the same sentence." Our London contemporary is growing a trifle facetious with its advancing years.

Too Much Time in School.—May 18th Collis P. Huntington, the railroad magnate, at a banquet in San Francisco referred to the increase of higher education for the masses and said:

"While preparation for professional life requires advanced knowledge, it seems to me that the vast majority of our young people spend too much of their vigorous years of youth inside schoolrooms and not enough in the practical work of life."

"Sons of farmers, for instance, want to dawdle in cities, while college fledglings aim to sway the nation and its policy."

"The years from 15 to 21 are immensely valuable, for they are years of keen observation, individuality and confidence. In many cases, quite too many, they are spent in cramming the mind with knowledge that is not likely to help a young man in the work he is best fitted to do."

And this is not all Mr. Huntington. These years are spent in too continuous and too long sittings, and in crowding and packing and cramping the expanding neurons of the growing brains of our youth without giving them adequate time for expansive reconstructive recreation.

The evolution of the psychic and psycho-motor neuron and the trophic centres of nutrition and growth is repressed by too much and two untimely brain tax. Pedagogical fal-

Iacies of the value of brain cramming with perception at the expense of reasoning knowledge have prevailed in our school and brain physiology and the laws of its healthy evolution and growth in power have not been duly considered.

Education should develop the child into a stronger and better brained adult. But instead we have graduates, too many of high-school, academy and college, who possess less strength of brain when they come out than when they went into school and weaker physiques than their progenitors.

The intellectual reservoirs are filled to overflowing but the mains and the centres of distribution are damaged and defective. The pouch of the animal is stuffed with perceptual food beyond his power of digestion and assimilation and reflective studies are forced upon him beyond his years.

The continuous session from nine A. M. till two P. M. with home tasks added is murderous to neural evolution with the young of the present generation. Short terms of study and long terms for reflection and play and a more restricted number of studies and these so timed and numbered as to develop brain growth and power with the student's destiny in view, and not stunt either brain or body evolution, is better than over-much study and too much knowledge too early in life. Better no education than an education that dwarfs. Better no education than that pseudo education which develops aspiration without power of acquisition.

We have too much of the present kind of educational cramming and compression; too much impractical stuffing and unphysiological nerve exhausting brain strain training.

The *educese* idea of the average pedagogue is to cram in impractical and practical knowledge and drain out the nerve force to the point of exhaustion and neurasthenia without imparting the proper vigor and power of mental training gauged to the developmental needs and daily reconstruction capacity of the developing psychic neurons.

The habits of the school going child out of school should be looked after. He should be kept in proper training like a pugilist or an athlete preparing for a contest. He should be trained for the battle of life not in a course of study descended from cloistered clergymen designed to qualify for lives of leisure and study, for cleric robes, literary criticism or oratorical pleading; not for literary leadership but for service in the ranks or in leading the bread winners.

The present system of education is still too much the legacy of the learned to those who would aspire to be learned, whereas it is far better for the average man of to-day to be practical than learned in literature only.

The powers and beauties of nature and the science of correct living, one's own anatomy and physiology, the chemistry of life, sanitation and how to maintain the human machine best and longest in good running order without needless loss of power or premature breakdown; what, how and when to best supply it with power-making food and fuel and material to manufacture into life sustaining products should be the aim of all modern education.

And here you are wrong Mr. Huntington; No man can have two of the right sort of power developing, strength supplying, and life and health supporting education. The method only is wrong.

The burning of the midnight oil fallacy should be exploded; better read by the light of the morning star and the rising sun; better go forth to the battle of life with an unstrained well rested brain than with a broken exhausted nervous system. It is the strong and intelligent, not the weak and worn by wrongly applied education who win life's battles. To be weak, though educated, in the battle of life is to be miserable and often a miserable failure ends the contest of the weak though highly educated.

Education is alright but much of the present cramming system is wrong because it is a system of inconsiderate brain grading that takes no just account of the capacity of the human machine it is overtaxing out of its natural growth. You can overfeed and injudiciously feed the brain as you can the stomach. Education should draw out power and yet not exhaust all the brain reserve. Exhausting education is destructive. All brain effort like all proper muscular exertion, should stop short of exhaustion and end with oncoming weariness, that recuperation may not be impaired and that greater power may be developed from effort.

Education should aim to remove the handicap of mediocrity by storing the mind according to the brains' needs and capacity of development and receptivity, not beyond them. Genius is exceptional and will find a way to supply its mental needs and take care of itself.

When pedagogies shall have become more enlightened in brain physiology and shall understand better the laws of brain reflex activity and nerve center waste and repair it will better adapt tasks to capacity, age and nature of the

pupil and even nerve and mental wrecks and dwarfs will mark the pathway of modern education. The infirmaries, asylums and cemeteries of the brain overstrained will be fewer in the land than now if the race shall survive to the time of so glorious a consummation of humanity's hopes.

We shall then no longer see the pitiable spectacle of college bred men, educated to the point of debility, indecision and practical unfitness for a place on the firing line or in the ranks of victorious strategy in the battle, the march and bivouac of life.

Latin in Prescriptions.—Our friend Prof. J. M. Good, Ph. D. D., Dean of St. Louis College of Pharmacy thus discusses this important subject in Meyer Brothers' *Druggist*. "Latin W.," of Arkansas, writes: "Kindly criticise the enclosed prescription and *translate directions exactly as given.*" The prescription is as follows:

℞	Fl. Ext. Turnera Aphrodisiaca.....	ʒ i.
	Fl. Ext. Euonymus Atropurpureus.....	ʒ ii.
	Fl. Ext. Nux Vom	grs. xiv.
	Fl. Ext. Saw Palmetto.....	ʒ i.

Signat.—*Cochleore amplum quoque quarturo horae.*

The prescription should have been altogether in Latin, and the names of ingredients should have been in the genitive, or all should have been in English. The drug names instead of plant names would have been better. For the last ingredient *gtt.* should have been written instead of *grs.*

The signature was either incorrectly written or incorrectly copied. *Signat* may be construed to be an abbreviation of *Signatura*, ablative, meaning "with the signature;" an imperative is more commonly employed in which case it should have been *signa*, "sign."

Cochleare (not *cochleore*) *amplum* means an ample or large spoon, and is usually translated "a tablespoonful," although this is not strictly correct; it is either the nominative singular, subject of the verb *capiatur*, "let be taken" or it is the accusative singular, object of the imperative *cape*, "take," the verb in either construction being understood; we may translate this therefore, "let a tablespoon (ful) be taken."

The next word, *quoque*, is the ablative singular masculine (or neuter) of the adjective, *quisque*, *queque*, *quodque*, every; it is evidently intended to agree with the word, *quarturo*, but what this is intended to mean is only to be guessed, for the word is not in the dictionaries; probably the writer thought of *quartarius*, *ii. m.*, one-fourth part; or

possibly it is an effort to Latinize the English word "quarter," after the style of the college rhyme:

"Boylbus kissibus sweetum girlorum,
Girlabus likeabus, wantum someorum;" etc.

Horae is the genitive of *hora*, the hour, and means "of the hour." The meaning intended may have therefore been: "Take a tablespoonful every quarter of an hour."

Q. q. h. is an abbreviation of *quaque quarta hora*, meaning "every fourth hour" or "every four hours;" the word *quarta* (with *pars*, part, understood) means also "the fourth part" when followed by a genitive; *quaque quarta hora* therefore means "in every fourth hour," while *quaque quarta horæ* (genitive of *hora*) means "in every fourth part of an hour," or "every quarter of an hour." Probably it would be difficult to find a better example to illustrate the danger of using Latin signatures (or the abbreviations for the same) than *q. q. h.*, which may mean "in every fourth hour" or "in every quarter of an hour," leaving it for the druggist to guess what is meant.

In the example given it is also a matter of guess as to what was intended by the writer; the use of the genitive *horæ*, "of the hour," seems to favor the interpretation "every quarter of an hour" but the ingredients and the dose argue in favor of "every four hours," in which latter case *quoque* should have been *quaque*, *quorturo* should have been *quarta* and *horæ* should have been *hora*.

If anything else was meant, the signature is equally incorrect.

This example therefore resolves itself into another warning to physicians: Do not use Latin signatures nor the abbreviations for the same. And a warning to druggists: Do not attempt to guess what is meant by an incorrectly written Latin signature.

When the druggist translates such a signature and places the English on the label he becomes responsible for any accident that may occur in consequence.

A distinguished Englishman once received and declined to present to the chemist for filling a prescription with the instructions: *Signa cochleare magnum quoque quartura horae* and thought thereby he saved his life for the prescription called for a deadly potion in such doses so often repeated.

The moral of all this is: Write instructions in the familiar modern tongue of the country and the lesson is that the English language is safer than any of the Latin tongues, its cases not depending on terminal endings but usually out of unmistakable prefixes, only very exceptionally on suffixes and these usually designated by apostrophe.

Sacrifice Like Unto Abraham's.—When Abel Dykstra of South Holland surrendered yesterday after having murdered his 5-year-old son, he declared:

"God told me what to do," he said. "He has ordered me to offer up Peter as a sacrifice as Abraham was told to do with Isaac."

Dykstra used a corn knife with a keen blade almost two feet long, and nearly severed the child's head from the body. Then he mounted a horse, rode over to John Meeter's home, detailed the story of his crime and asked to be forgiven. Meeter took him into custody and set out for the home of Justice Peter De Young. The grandmother of the murdered child had witnessed the killing from the door of her own house, a short distance from the Dykstra home. The entire neighborhood was aroused and a posse organized to pursue the maniac murderer, but in the meantime he had surrendered to Meeter.

Dykstra told the justice that he had slept little for three or four nights, the command having worried him greatly.

He had read his Bible, he said, and prayed that the decree might be countermanded, but, he declared, the Spirit persisted.

Two days ago Dykstra told Cornelius Van Brunnen, the aged father of his wife, Vyverke, of his inspiration. It was then seen that his insanity, which had been noticeable heretofore in mild form, was developing into a violent state. Mrs. Dykstra and her two children, Peter, 5 years old, and another son 20 months old, were removed to the home of her parents to prevent their meeting with harm at the hands of the husband and father.

Early yesterday Peter was sent from the house of the grandparents to assist his father about the farm work. The lad arrived shortly after 6 o'clock and found his father busy about the barn. The moment Dykstra caught sight of his son he grasped the corn-knife hanging on a hook nearby and started at the little fellow with the weapon raised above his head. The boy turned about and ran as fast as his little legs could carry him, pursued by his mad father. He had gone but 100 yards when the parent overtook him and with a swift thrust of the peculiar weapon nearly severed his head from his body.

Dykstra, without even looking at the prostrate body, hurled the knife to one side and ran back to the stable, where he quickly unhaltered a horse, and, jumping astride it, rode away across the fields.

Mrs. Van Brunnen, who had feared for the safety of

her grandchild, was watching from the rear door of her home. She saw the chase and the attack and then started to raise an alarm. A half dozen men mounted horses and started in the direction he had taken. The body of the child was covered with a sheet and left lying until the Coroner and his physician could be summoned.

Dr. E. C. Noel and Deputy Coroner Reynolds arrived at South Holland and held an inquest at the home of the Van Brunnens in the afternoon. Dykstra was taken from the office of Justice De Young and testified at the inquest. As he entered the little parlor his disheveled hair, wild eyes and appearance in stocking feet readily proved to the Coroner's physician his insane condition.

It required but a short time for the jury to reach a verdict, which was to the effect that the child had been killed by its father while demented.

The murder threw the little German settlement into a turmoil. It was the most horrible happening the hamlet had ever known. Farmers came into the village and gathered in knots about the corners to discuss the tragedy.

Dykstra is 35 years old and a Hollander by birth. Ten years ago he emigrated to this country and settled near his present home. Three years later he married and has always been considered honest and upright, though during the last two or three years he has been so intensely devoted to religion that many of his acquaintances feared his mind would give away.

The American Medico-Psychological Association held at New York May 23d to 26th was well attended and socially and scientifically very successful. Dr. Henry M. Hurd of Baltimore presided.

The Index Medicus.—At the recent meeting of the American Medical Association a resolution that the association edit and publish the *Index Medicus* was referred to the trustees, who, with the editor of the Association *Journal*, have taken the matter under consideration.

From this action we hope may be evolved a plan to maintain the continued existence of this valuable auxilliary to medical study and reference.

The Brain Break of the Brainy.—The record of premature brain breakdown among American men of affairs is appalling. It is a record of self-violence not by mechanical instruments of destruction, but outrageous disregard of the physiological conditions of normal existence. It is a

record of suicide by physiological self-denial and self-injury through the whip and spur of over action. The goad is used instead of the garrotte, the stimulant that robs of sleep instead of the knife or the pistol that takes away life.

To have capacity for success is to have a penchant for self-destruction with too many of our men of affairs and no rational fruition of prosperity comes to them because they wrong their organisms by incessant action and will not rest. Governor Flower's sudden ending is a case in point. Who comes next?

The Hull bill provides for 500 medical officers in addition to the surgeon-general—10 (two per cent) colonels, 20 (four per cent) lieutenant-colonels, 110 (twenty-two per cent) majors, and 360 (seventy-two per cent) captains and lieutenants—while it provides for 569 other staff officers, of whom 48 (over eight per cent) are to be colonels, 79 (nearly fourteen per cent) lieutenant-colonels, 165 (twenty-nine per cent) majors, and 277 (nearly forty-nine per cent.) captains and lieutenants. These provisions, the committee justly say, fail to do justice to the medical profession. Medical officers, they add, desire their responsibilities to be recognized, and that they themselves be endowed with as much rank, power, and position as officers.

Whether it is viewed in the light of medical supply, involving the expenditure of large sums of money; in the light of sanitation, involving the military efficiency of the whole command; in the light of military administration over so many officers, hospital corps men, nurses, and hospital establishments; or in the light of caring for 10,000 men, or ten per cent of the army—which is an average percentage of sick in times of active service—the importance of the work and the extent of the responsibilities appear to us to be more than equivalent to those of a division commander who has the rank of major-general. The chief of the medical department in most European armies has this rank. We, therefore, are of the opinion that in recognition of the great responsibilities attaching to the surgeon-generalcy of such an army the officer holding this position should have the rank of major-general, and that the senior of the assistant surgeons-general should have the rank of brigadier-general."

Gout.—Schmoll (*Centralb. f. inn. Med.*, October 22, 1898) discusses the theory of this disease. He says that one point in Garrod's views as regards gout remains true, and that is the richness of the blood in uric acid during the

attack. The necroses of tissue in which uric acid crystals are deposited constitute a new fact discovered by Ebstein. Some authors have shown that gouty patients are unable to maintain a nitrogenous equilibrium in spite of a sufficient supply of calorics and an adequate nitrogenous diet. It is not known in what form the nitrogen is retained. Before and during the attack of gout a nitrogen deficit accompanies the nitrogen retention. Garrod has endeavored to explain gout by a diminished excretion of uric acid, Ebstein by an increased formation, and Pfeiffer by an increased production, together with something else. Reliable analyses have shown that the excretion of uric acid in the gouty varies within normal limits. For a long time uric acid was looked upon as an incomplete oxidization product; now it is generally believed that it is derived from nuclein and the alloxan group. Feeding with nuclein or with thymus has been shown to increase greatly the excretion of uric acid. Uric acid arises through the oxidization of the alloxan group: (1) Cells perishing in the body leave nuclein, from which uric acid is derived. (2) Uric acid is also derived from the alloxan group supplied, such as theine, caffeine, etc. (3) In the gouty deposits of uric acid may be dissolved, and so increase the excretion of uric acid. It is very difficult to estimate the last named factor. As regards the second, feeding with pure nuclein and thymus shows that about one-fifth of the allaxan bases thus supplied are oxidized into uric acid, and the other four-fifths disappear in the body. The latter may be built up into nuclein, or the alloxan bodies may be split up in the alimentary canal. Another, and the most probable view, is that the bases are absorbed and are converted into uric acid, which latter if not excreted by the kidney is changed into urea. It is impossible yet to say whether the uric acid formation is increased or diminished in gout. In a gouty patient fed with thymus the excretion of uric acid was increased from 0.5 to 1.3 g. This would show that the richness of the blood in uric acid was due to increased formation. This increased formation would appear to be due to increased cell destruction. Pfeiffer and others have shown that during the attack of gout an increased amount of uric acid is excreted. The necrotic processes described by Ebstein will explain the cell destruction with escape of nuclein as mentioned above. The cause of these necrotic processes is as yet unknown. The author would look upon them as caused by the retained nitrogenous metabolic products. The questions remaining to be solved are: (1) What substances are retained in the

body in gout? and (2) under what conditions are they retained.—*British Medical Journal.*

Sulphonal Poisoning.—Wien (*Bierl. klin. Woch.*, September 26, 1898) relates a fatal case of subacute poisoning in a woman, aged thirty-two, suffering from paranoia. The patient received mostly three doses, each of 0.5 gram, at intervals of an hour and a half on each of thirty-one days, with occasional intermissions. The urine was examined daily, and the patient had been treated previously with about the same doses with no ill effect. When the sulphonal was discontinued the patient had become quiet, but this was not the result of any sulphonal narcosis. Her general condition was good. Thirty-six hours later the symptoms of sulphonal poisoning appeared. They consisted at first of gastric symptoms, with pain and vomiting, and later paralysis and hematoporphyrinuria were noted. It appears to the author probable that the poisoning was due to a cumulative action. Besides the ataxia there was paralysis in the arms and legs, probably due to a peripheral lesion. A notable fact in this case was the late appearance of the hematoporphyrinuria, which occurred eight days after the onset of the intoxication symptoms. Albuminuria and other evidence of a toxic nephritis appeared later. The pulse rate fell toward the end to sixty-eight as a result of changes in the myocardium. At the necropsy a nephritis and cystitis were found. The heart muscle showed degenerative changes, and the pericardial sac contained an excess of fluid. The author maintains that the great danger in sulphonal poisoning lies in the irreparable changes found in the heart. In the stomach there were small hemorrhagic erosions, and the organ presented an hour-glass contraction due to old ulceration. Nine-tenths of the cases of fatal sulphonal poisoning have occurred in women. Although the number of cases of poisoning by sulphonal is small considering the frequency with which it is used, yet precautions must be taken. The use of this agent must be as limited as possible, and intermissions of even four or five days are too short. The author thinks that when symptoms of poisoning have already appeared, transfusion—or, failing that, infusion—of saline solution should be tried. Camphor should be used in case of the least threatening of cardiac failure. Efforts should be made to promote the excretion of the sulphonal by diuresis, etc.—*British Medical Journal.*

We regard it as a grave therapeutic error to give sulphonal in the above manner. Like chloral it should be

given in one adequate dose or at most two preferably at the close of the day when sleep and rest would be most likely to follow, with a long intervening period of rest, elimination and recuperation.

The prolonged effect of sulphonal is a matter of well attested clinical experience and while forty-eight hours is ordinarily a minimum interval limit of administration, four or five days as the author states may sometimes be none too long an interval to abstain from its repetition.

The Troubles of an Ophthalmologist.—Our amiable editorial friend, Dr. George M. Gould, is in a peck of trouble. He is somewhat like a patient we once had at the Fulton Asylum who, after the loss of his property and other troubles, became convinced that he had the world on his shoulders like a modern Atlas and could not stand it and went about the institution exclaiming: "How can I stand it! How can I stand it!!

Now this is what is the matter with some of our advanced ophthalmological friends. They imagine they have the whole neurological world on their shoulders and the aesthetic relations of medicine and life besides and "how can they stand it." It is "positively maddening."

The eye is a projection of the brain but these ophthalmologists, deluded gentlemen, imagine it to be its base and support. These atlases are become bent and distorted under the burden and are suffering psychical nystagmus, strabismus, hyperopia and general fault of accommodation to their neurologic and psychologic environment.

Dr. William Whitney Godding, superintendent for many years of the Government Hospital for the Insane, died Saturday, May 6. The doctor was born at Winchendon, Mass., in 1831; received the degree of bachelor of arts from Dartmouth in 1854, and that of doctor of medicine from Castleton Medical College in 1857. For a time he was engaged in general medicine, then as assistant physician in the New Hampshire State Asylum. In 1863 he became assistant physician of St. Elizabeth, and after seven years became superintendent of the Massachusetts Hospital for the Insane. After another seven years, in 1877, he was made executive and medical head of the Government Hospital for the Insane. Dr. Godding's successor will probably be Dr. J. C. Simpson, who has been assistant superintendent for a number of years.

Several decades have passed in the history of neurotherapeutics since it began to be suspected that strychnia

was a possible remedy for alcoholism. It is well now to recur once again to Breed's conclusions offered in 1894 and note how truly those conclusions have been verified by experience. It is not a gold cure, but it has proven golden in its results. Nitrate of strychnia, bromide of sodium, ammonium or strontium with nerve tonics and systemic reconstructives and the proper use of opium, codia heroin, dionin, etc., judiciously used by a competent practitioner of medicine on an acquiescing patient will rescue any inebriate from the toils of alcohol and keep him safe from its thraldom.

Following are the conclusions of current clinical observation five years ago. Let us read them again. These are from Breed in *Medical News* of April 7th, 1894:

1. That we have in this drug a remedy that actually, for a period as yet undetermined, removes the desire for alcoholic stimulation in the chronic inebriate, and *that without the least effort on his part.*
2. A remedy that removes the distress and gnawing at the epigastrum, so common upon the withdrawal of alcohol.
3. A remedy that tones up the nervous system, allays insomnia, the flighty and other bad feelings in the head, the mental disturbances, and the tremulous agitation and uncertainty of voluntary motions due to the withdrawal of stimulants.
4. A remedy that brings back the appetite and general physical vigor of the body.
5. A remedy that temporarily transforms a wholly demoralized creature into a man.
6. A remedy that is of great value in acute attacks of alcoholism.
7. Incidentally, a remedy that is an exceedingly good and safe heart-tonic.
8. More than all a remedy that exerts a moral influence upon the patient, giving him what he had before wholly lost—to-wit, hope, enthusiasm, self-confidence, and courage, when before was despondency, abandonment and despair; a steady, straightforward gaze, and a bright, youthful expression of the eye, which replaces the shamefaced, sneaking, apologetic air of total depravity of the chronic inebriate.

Died of Parotitis.—Dr. William Lambert Russell, the oldest Harvard graduate, died at Barre, Mass., of mumps, aged 99 years, May 6th.

Central Indiana Hospital for the Insane, Geo. F. Edenharter, M. D., Sup't., has mailed us a photograph

and "blue print" of the proposed new hospital for the *sick insane* of that state. The entire group of buildings is to be one-story high—the floor four feet above the grade level—over a full lighted and well ventilated basement—the floor which is to be of cement.

There will be no basement under the operating room or accessory rooms thereto.

An additional height will be given the ceilings in the operating, dining rooms and kitchen.

The foundation walls throughout are to be built of Indiana stratified lime stone. The superstructure of brick, with coölitic lime stone trimmings.

All external walls above the grade level are to be laid with an air space.

The plastering is to be of cement.

The inner walls of the operating room, bath rooms and closets are to be of enameled brick or tile.

The roofs of all buildings will be of slate.

The heating indirect and direct, indirect low pressure.

The ventilating and plumbing systems throughout are to be of the most modern type for hospital construction obtainable.

Adequate air space and sunlight exposure are provided for all parts of the building and the ground is ample for exercise, recreation and out-door diversion of patients, as demanded by advanced sanitary science.

A Dispensary for Tuberculosis has been founded in Chicago. Most of the credit is due Prof. Edwin Klebs, through whose benevolence the institution has been established. Klebs' tuberculocidin will be liberally used and Prof. Klebs will often as possible visit a clinic there.

Manufacturers of antiseptics have sent valuable and costly drugs. Mr. Champney of the Bovinine Co., bovine; Messrs. Johnson & Johnson, of New Brunswick, New Jersey, antiseptic towels, cotton bandages, and Mr. Bell, of Armour & Co., thyroid tablets for those suffering from atrophy of the thyroid gland, a condition, which, according to Professor Klebs' experiments, is responsible for the digestive disturbances and malnutrition in tuberculosis. The professor and a few private friends also promised to see that food be supplied those needing it.

The following gentlemen form the staff: Prof. Edwin Klebs, consulting physician, Drs. Gustavus Blech (director), Gustav Schirmer, F. H. Westerschulte, Henry Klebs (bacteriologist).

This is timely scientific philanthropy and may be the beginning of the extirpation of tuberculosis in America.

The Newspaper Reporter in the Medical Society.—By Medicus. Few specimens of the genus homo are more interesting to the student of anthropological science than the newspaper reporter in an ethical medical society. He is monarch of all he surveys and he surveys it in a manner still generous and peculiar. The mental vision of his environment is an illusion and a snare. To be reported upon is with him to be sat upon. According to his delusive ideas the medical society is a museum of natural curiosities and a wit and humor factory combined. His mission is to make a lively report of the deadest of subjects; to beautifully blend the fiction of his fancies with the facts of science. If a trifling difference of observation or opinion arises among the members, he cheerfully notes the fact with a specially animated manner, a manner like unto Mark Twain's report of the Society of the Staniolans. He sees fun in a fatal fern, frolic in a corpse and fire in the eye of as mild a mannered living fossil as ever lifted his voice in behalf of the "progress of science and the advance of our glorious profession." He delights to see the fur fly as at a promiscuous cat-fight and he goes for the different doctors by gentle insinuations, slight perversions of speech and scarcely perceptible reportorial prevarications, until he gets the doctors to going for each other and then he is happy. He calmly surveys and cheerfully chronicles the exciting result for the next morning's paper, as polly did the saloon fight; hoping thereby to secure for his extraordinary reportorial talent an advance of ten cents on his next week's salary, relying upon the well-known appreciative generosity and enterprise of the great metropolitan daily whose highly flattered and superbly salaried representative he has the honor to be. Secure in the confidence of the great moral, great religious and great scientific journal which he represents, and confined in his fealty to his very noble and approved good Master, the bosses of the newspaper sanc-tum. Through the manificent increase of his pay, he comes again to our meetings and goes for us like Truthful James for the heathen Chinee, and with fidelity to his trust like that of Truthful James' description of Ah Sin, the game which the latter didn't understand. He prepares his historical account of the battle of the medical Titans for the public entertainment in a manner delicate and grand. It reads somewhat like a mill, not a water-mill by a 'dam site,' but a mill of pugilists.

The newspaper reporter is an omniscient cuss and knows everything, of course, but if there is one thing that he understands especially better than another—any knowledge that he particularly dotes on, it is medical science, athetosis, thrombosis, psychosis, syphosis, neurosis, hypnosis, lymphangitis, polio-myelitis, anterim infantile and syringo maligna and enthromegalilin are as familiar to him as the *iter-elerteo ad quartum ventriculum* or the never to be forgotten name of his last best girl, though he gets the terms a little mixed in his prayers. He is a hustler and a rustler. He beats the march of science and heads the procession.

He is an inventor. He makes science and makes and remakes scientists. He is a psychological anomaly. Insomnia is his normal condition; he never sleeps. He is also a geological curiosity, a blending of the higher and lower type of animal creation, part man, but chiefly gopher—go for items is his motto. His favorite haunt when not at the medical society, where he most delights to be—is chiefly in the owl car going home therefrom, except when telling little white lies to his favorite dulcenia to keep her awake till mamma and papa fall asleep. To his dulcenia he's a daisy, he's a darling, but to the medical society he's a holy terror. This illustrates his dual character. He discusses crematory subjects as creamery matters and sanitary and mortuary statistics have to bring the same significance. Dead or alive is all the same, so the resulting item is lively. He decks out a funeral procession with flying colors, perpetrates a joke at the expense of the doctor and his latest victim and remarks philosophically in the material relations of the undertaker and the physicians.

He is pathetic and sympathetic and listens to your tales of woe gleefully and fictitiously chronicles it in the morning trumpet. Nothing pleases him better than an appetizing morsel of scandal to serve his readers before breakfast, a blood and thunder narrative to excite tragic dreams in sleep during the interval when the society is not in session. These little diversions keep his brain receptive for the great surgeon Ecrazeur's crushing account of how he removed a quadrangular angro-sacomatous lipoma from Scarpa's triangle with a skillful stroke of the knife excising two of the cervical vertebræ, the jugular vein carotid artery and phrenic nerve, at the same time resulting in the patient's entire recovery. He tells glibly and beautifully how old clinic diagnosed an osteo-sarcoma of the pinal gland of specific origin and how young histology discovered a new growth in the sarcophagus of the mediastinal thorax.

He takes a special interest in jim-jams from previous and prospective personal experience and chronicles with zeal the safe remark of Doctor Therapeusis, "that the hair of the dog is good for the bite." He believes that much in the homeopathic law of similar and tries this experiment on himself with satisfactory results. He has the advantage over ordinary medical reporters in there being no limit to his anatomical knowledge. His pathological acquirements are equally boundless, his histology is marvelous and his therapeutics without a parallel. He is a walking encyclo-poeia of chemistry, a perambulating dictionary of physiology and a demijohn of spiritual inspiration in the department of therapeutics.

The newspaper medical reporter was not born in the natural way. He simply came as an evolution of the ages. He came in the fullness of time and is, as I have said, a full man generally. We are lonesome without him and unhappy when he is with us.

He's a ready man, but more rough than ready on the medical society. He's a clever fellow at a distance and improves on near acquaintance; nevertheless we should like to have him go. He is an elephant in our frog pond, continually treading on us or tossing us about in a rather amusing way to him, but the performance death to us, as the frogs said in the fable. Now wont you please go, Mr. Elephant, and give medical science a rest.

REVIEWS, BOOK NOTICES, ETC.

SOME NEW AMERICAN DISEASES. The Journal of Medicine and Science for April, 1899, published at Portland Maine, contains the following instructive editorial on the above subject: The United States of America having included in its domain new and far distant territory, the diseases of these recently acquired "American Climates," should now receive some attention from the medical profession. It is true that these new possessions are so far away as to be practically "foreign soil," particularly the islands of the Pacific. But, as has been shown in the present smallpox scare, the returning soldiers and visiting "citizens" from these, until recently, "foreign climes" may become the sources of introducing into our midst, even in the far colder climate of New England, strange and hitherto "unheard of" diseases.

It is true that most of these diseases are common to, and, as a rule, exist only in a climate of great heat intensity. For instance, in Manila, the heat is always on hand, there being no month of the year in which it does not rise as high as 91° and the mean annual temperature is 80° F., and this with an atmosphere most of the time heavily charged with moisture, which makes the heat doubly trying and difficult for garrison troops to keep in good time. It is said that on white women and children the climate is especially severe.* Malarial fever is common in the Philippines, and, "a

*There are, however, several varieties of climate. "As the north part of Luzon Is as far from the south of the Sulu Islands as the north of England from the south of Italy, and as the archipelago is divided by the line of the ecliptic, the climate of one region differs considerably from that of another, though the general characteristics are everywhere tropical."

temperature of 106 5° does not occasion alarm, although it is uncomfortable. Indeed these high temperatures are usual in a hot country. (See December Journal, page 23, on "Continued Fevers.") There are several types of fever in these islands, new to this climate, but which may be easily shaken off there, if taken in hand energetically; but the much dreaded *calentura perniciosa* is very malignant, running its course in a very few hours and frequently terminating in black vomit and death. This is fortunately local, and the places where it is known to exist are shunned by the natives. From Manila to Maine is a very long distance, and, yet we had the smallpox in this state, at the same time, or soon after its spread in the Philippines, Cuba and Puerto Rico! There are now 1,000 cases in the latter island, while the vaccination of its 1,000,000 inhabitants has but just begun.

During two weeks of January, 14 out of 19 deaths among the troops in the Philippines, were from small-pox.

Gen. Otis says that "climatic conditions are such that the bodies of soldiers killed in the Philippines cannot be sent home for six months, without danger to those handling them."

The diseases of these islands are, as yet, almost unknown, so that the first medical fact, from a scientific journal published in our new possessions, (*Cronica de Ciencias de Filipinas*), is of interest, and it describes two distinct forms of hydrophobia from the bites of rabid animals. The medical profession will await with interest the reports of Drs. Simon Flexner, professor of pathological anatomy and resident pathologist of the Johns Hopkins Hospital, and L. F. Barker, his associate, who with two assistants sailed for the Philippines, March 27, to spend some months in the study of tropical diseases. Prof. Flexner has recently been appointed to the chair of pathology in the University of Pennsylvania, made vacant by the resignation of Dr. John Guiteras, who is to study tropical diseases for about a year, with special reference to Cuba. In a lecture March 6, Prof. Guiteras stated his opinion that sixty per cent of Americans who go to Cuba for the first time would contract yellow fever, with a death rate of from five to six per cent.

Shortly after our troops were settled in Honolulu, Dr. W. F. Robinson, U. S. medical inspector there, says that they were attacked by a disease which seems to bear a strong family likeness to nostalgia, but which may be said to be another form of the American grip or influenza. There are pains in the bones and small of the back, severe headache, coated tongue, loss of appetite and slight fever; general depression and discouragement are constant, and the moping homesickness has caused the name of "boo-hoo" fever to be given it. The natives of Hawaii, however, have had worse diseases from foreigners who have come among them since the days of Captain Cook. They had been utter strangers to syphilis and tuberculosis, which were now propagated with fearful rapidity by promiscuously affectionate habits. The measles came in 1848, from California, which disease was mistreated into alarming inflammations, which decimated the population, and was followed by the world-wide influenza, and by whooping cough and scarletina. But the climate of these islands is healthful and delightful, as a rule. On the whole, as far as we have any knowledge of the diseases of our new territorial acquisitions, we can, thus far "give them as good as they can send;" but they have more dreadful, loathsome and fatal diseases: for instance, leprosy, yellow fever and a few others, at least, of the semi-tropical sort, and many that remain to be known and studied.

In this connection, it is worthy of remark that the medical profession of the whole world seem alive to the need of studying tropical diseases. We note that Dr. H. E. Annett has been appointed demonstrator of tropical pathology in the newly founded school of Liverpool; and both Edinburgh and Aberdeen have taken steps to establish lectureships on the diseases of the tropical climates, while American and German medical schools have begun in the same direction. These diseases deserve careful consideration. At the

same time, we know that the present health reports of Hawaii, Havana, Puerto Rico and the Philippines are continually showing that the sanitary condition of all our new sea isles have begun to greatly improve under American impetus.

NERVOUS AND MENTAL DISEASES. As a sample of what this periodical is doing, we give its collaboratorial contribution to neurology and psychiatry for April.

Necrosis of the Jaw in Locomotor Ataxia. Laspeyres (*Deutsch Zeitsch. f. Nervenheilk.*, 1899, Bd. 14, 3-4) reports a case of this somewhat infrequent complication of tabes dorsalis. In 1891 Rosin had collected records of twenty-two cases of lower-jaw lesions, although few of these had proceeded as far as necrosis; the condition was simply that of falling out of the teeth, with atrophy of the alveolar process. Since 1892 a few well-marked cases of necrosis of the lower jaw have been reported. One point of interest in this lesion is the possible relationship which it might bear to syphilis, which is such a frequent factor in tabes dorsalis. There is every evidence, however, that it cannot be a gross syphilitic lesion. The progress of the affection is painless, and without periostitis. Analogous lesions have been noted in the hard palate and nasal septum. The idea of trophoneurosis is usually implied in discussing these lesions, but careful study of the inferior dental nerve, Gasserian ganglion, medulla, etc., have revealed nothing which can uphold this ætiology, which is therefore determined purely by exclusion. A peculiarity of these jaw lesions is unilateral location of the necrosis with bilateral analgesia in the inferior maxillary region.

Acute Delirium from Coprostasis and Intestinal Auto-intoxication. Galante (*Annali di Neurologia*, Vol. xvi, Fasc. 4-5) concludes that there is a form of acute delirium which is due to bacteria, and which differs from all other forms. It differs clinically in having a greater intensity of symptoms; by a state of adynamia which succeeds to the stage of excitation; by a short course and fatal termination. It differs bacteriologically because a special bacillus may be recovered from the blood and nerve centres.

There is a form of sensorial delirium with fever, in which no pneumonia or other local inflammatory process is to be found. This form is not the same as the one now under consideration. The acute bacillary delirium can be diagnosticated only by the presence of the bacillus. For the latter to develop a peculiar soil is evidently necessary, a severe, profound disturbance of nutrition. Von Solder described the same condition during the past year, and appeared to show its dependence upon the most obstinate constipation (cyprostasis) with intestinal autointoxication, and reported a number of cases in which occurred the syndrome of coprostasis associated with a peculiar type of acute delirium.

Galante reports a corroborative case of his own; the bacteriological examination, however, was negative. A number of neurologists have reported bacteria of some sort in the blood, urine, etc., of certain cases of acute delirium.

Autointoxication in Epilepsy. Ferrannini (*Annali di Neurologia*, Vol. xvi, Nos. 4-5) has made an exhaustive study of this theme in Prof. Blanche's psychiatric institute in Naples. He finds that the daily quantity of urine has no relation to the epileptic attacks, nor does the density of the urine have any constant relation to the convulsions, although it is often elevated afterwards. The action of the urine of epileptics provokes the same phenomena when injected subcutaneously in animals as does normal urine (depression, subnormal temperature, tremor, frequent micturition, dyspnoea, paralysis, convulsions, death). All the urine passed between attacks has shown normal toxicity. That passed a few hours before the attack, or a certain time after, has seemed to be less toxic, while that passed from two to four hours after causes more violent symptoms of depression and paralysis. Autopsies upon animals killed by urine of epileptics are negative.

The increase in toxicity cannot be due to uric acid or potassium salts, nor can these substances be regarded as responsible for the epileptic convulsions.

Micro-Chemistry of Nerve Cells. Macallum, A. B.—Some Points in the Micro-Chemistry of Nerve Cells. (*British Medical Journal*, 1898, v. 2, p. 778.—Nissl's spindles have lately been considered as integral portions of the nerve cells, comparable to the zymogen granules of gland cells. Mr. Scott, one of Macallum's pupils, by studying the cells in the anterior horn of the spinal cord of the embryo pig found that "these cells consisted almost entirely of nucleus rich in stainable matter." Later this contains less chromatin and a material staining with toluidin blue appears, at first near the nucleus, but later is distributed throughout the cell. This substance then appears as granules, and finally forms the spindles. It seems that the spindles are therefore derived from the nucleus. They resist peptic digestion, but slowly yield to trypsin, they are therefore similar to nucleoproteids. Further chemical examination show them to consist of nucleoprotein, and contain both phosphorous and iron.—*The Dominion Medical Monthly*.

EXTRAORDINARY BLACKMAILING.—A most infamous system of blackmailing has recently been exposed in England. In the first place the blackmailers carried on a most disreputable business of selling abortifacient nostrums for a period of about two years. They then sent letters to those women who had used the drugs, threatening to prosecute them unless they paid a certain sum of money. A great many yielded to their exorbitant demands. The judge, in referring to the position of these unfortunate victims, read a couple of letters. One writer, after expressing "the greatest sorrow for doing wrong," concluded: "But if I have done wrong I ask you to forgive me, as I did not know it was wrong, and I will promise you I won't do wrong any more, for Christ's sake. Amen." Another letter was from a poor servant girl, who sent two guineas demanded, and begged for forgiveness. The judge added that there were thousands of such letters.

After all evidence was given the judge analyzed it, explained the law affecting blackmailing, and then gave the case to the jury. After deliber-

ating three-quarters of an hour they brought in a verdict against the three blackmailers. They also added a rider expressing their conviction that the vile plot could never have been possible but for the acceptance of the prisoners' immoral advertisements by a section of the press, religious and secular. The jury were also of opinion that means should be found to suppress such advertisements, and the institutions from which they emanated—a recommendation which the judge said he would send to the home secretary. Two of the prisoners were sentenced to twelve years each of penal servitude, while the third was sentenced to seven years.

The *London Lancet* has recently investigated the nature of these nostrums used for the purpose of procuring abortions. It says that in one salve appeared to be the active constituent of the pills, while in the other the liquid was a mixture of senna and rue tea. The letters from the *Lancet* to purchase the nostrums were so written as to leave no possible doubt in the vendor's mind that the purpose for which the purchase was being made was the induction of abortion. The *Lancet* says: "If anyone should find in our conduct here matter for unfavorable comment on the ground that we have tempted Mr. Thomas Ottey to sin, we have to say that we found in him so willing an accomplice that we can hardly have been his seducers, and, secondly, that it is useless to fight a certain sort of stink with rose water."—*Canadian Practitioner*.

THE GRADUATING EXERCISES of the Training School for Nurses of Friends' Asylum for the Insane, Frankford, Philadelphia, to which we acknowledge cordial invitation, took place Fourth Day afternoon, sixth month 7, 1899. The presentation of diplomas was made by Samuel Morris; the address by Horatio C. Wood, M. D. Graduating Nurses class of 1899 are: Maud C. Edwards, Ohio; Lillian H. Groome, Pennsylvania; Georgetta S. Hannum, Pennsylvania; M. Frances Larkin, Ohio; Esther Marion Larner, England; Tirza R. McGinnes, Pennsylvania; Minnie Rattenbury, Maryland; Gertrude M. Stockall, Canada; Head Nurse, Constantia Anderson.

The instruction in this school includes the general care of the sick; the managing of helpless and bed-ridden patients; the making of beds, moving, and changing of bed and body-linen, etc., the prevention and treatment of bed-sores; the application of fomentations, poultices, counter-irritants, and the like; the giving of baths, the administration of enemas, and the use of the catheter; the preparing and serving of food, the feeding of helpless patients and those who refuse food; the observation of the sick in regard to the state of the secretions, pulse, respiration and temperature; the effects of diet, stimulants and medicines, laws of hygiene as regards the best practical methods of supplying fresh air, in the warming and ventilation of the sick room, sleeping room and ward, and in keeping the patients properly dressed, cleanliness and disinfection, instructions in bandaging, and the application of minor surgical dressings; and twenty weeks are given to the theory and practice of massage. Throughout the term each nurse is required to take the course in physical training in the well equipped gymnasium, where the modern methods of physical culture are taught. Instruction is

given on the attendance of patients requiring diversion and companionship; the observation of mental symptoms, such as delusions, hallucinations, delirium, stupor, etc., with the special care necessary in the treatment of excited, violent and suicidal patients, as well as the management of convalescents.

The officers of the Institution are: Physician-in-Chief and Superintendent, Robert Howland Chase, A.M., M.D.; Steward, Henry Hall; Assistant Physicians, J. A. Carncross, M.D., Grace E. White, M.D.; Superintendent of the Training School for Nurses, Grace E. White, M.D.; Gynecologist, Anna E. Broomall, M.D.; Ophthalmologist, Charles A. Oliver, M.D.; Dentist, William C. Stokes, D.D.S.; Pathologist, W. M. L. Coplin, M.D.; Assistant Pathologist, L. H. Prince, M.D.; Matron, Georgia M. Conway; Directress of Gymnasium, Letitia L. Hoskins.

EXPERIMENTAL STUDY OF CHILDREN, including Anthropometrical and Psycho-Physical Measurements of Washington School Children. By Arthur MacDonald, Specialist in the Bureau of Education. The whole series is interesting. We give the author's conclusions here with his algometric record of relative temple pain. The Algometer and Temple Pain Sensibility. In making experiments upon both sexes with the author's algometer he has found women to be more acute in sensitiveness of disagreeableness or pain from pressure than men. These measurements were made on four distinct classes, viz: University women students, washerwomen, business women, as clerks and stenographers, and young women of the wealthy classes.

The young women of the wealthy classes are, according to the measurements, very much more sensitive to pain than any of the other classes. The university women are more sensitive to pain than the washerwomen. The business women are, however, more sensitive than the university women. As is well known, the majority of university students, both men and women, are not wealthy, but simply in moderate circumstances. It seems that the sociological condition is one of the main factors to affect sensitivity to pain.

This Bureau of Education has the right man in the right place this time in this department. We shall recur to this subject again.

WORD-BLINDNESS. *Progressive Medicine*, Volume II, for June, 1899, is on our table, full of interesting matter on abdominal surgery, gynecology, diseases of blood diathetic and metabolic disorders, diseases of the glandular and lymphatic systems and ophthalmology. From the latter we extract the following:

Word-blindness, existing for a time without any other cerebral symptom, is reported by J. Hinschelwood, *Lancet*, February 12, 1898. The smallest letters were read simply with ease, but only a few words, as "the," "to," "of," were recognized by sight, although by spelling them aloud the words could be recognized. This symptom was the only one remaining a few days after an epileptiform seizure. The patient read numbers fluently, not only singly, but in groups, as thousands or millions, or as complex

fractions. Later weakness of the right arm and leg appeared, and aphasia, which became complete; he died nine weeks afterward. The lesion was probably a progressive thrombosis of the left Sylvian artery. Hinschelwood points out the ease with which such a condition is recognized, the patient showing good vision (6-8) with the test letters for distant vision, but being quite unable to read the usual tests, even the largest type, for the near vision. Edward Jackson, article ophthalmology in *Progressive Medicine*.

THE ANATOMY OF THE CENTRAL NERVOUS SYSTEM OF MAN AND OF VERTEBRATES IN GENERAL. By Prof. Ludwig Edinger, M.D., Frankfort-on-the-Main. Illustrated with 258 Engravings. $6\frac{1}{2} \times 9\frac{1}{2}$ inches.

Pages xi-446. Extra Cloth, \$3.00. The F. A. Davis Co., Publishers, 1914-16 Cherry Street, Philadelphia. The name of the distinguished author gives hopeful promise of the faithful fulfillment of the task assumed in the announcement of this much needed addition to the literature of neurology and a critical examination of the completed book before us confirms our highest expectations. The accomplished author of the first edition of "structure of the nervous system," has done his work even better than previous lectures of 1883-4 given to the American profession, in translation, by the same publisher in 1890. In this work the translators, Doctors Hall, Holland and Carleton have acquitted themselves most creditably, as Doctors Riggs and Hall have done in the now famous edition "Lectures" of the now famous author.

SHALL WE DRINK WINE is a physician's study of the alcohol question. The author is Dr. John Madden, Professor of Physiology in the Wisconsin College of Physicians and Surgeons.

The book is ably written, and the author's conclusions in harmony with the most advanced and most thorough research on this pressing subject of the day, are against wine as a beverage. The verdict of science and of all properly estimated experience is against alcohol as a beverage, whatever temporary uses it may subserve in therapeutics. Weighed in the balance of critical examination it is proven a delusion and a snare as a drink or food and the verdict of Him of old who said, "Wine is a mocker and whosoever is deceived thereby is not wise," is after a lapse of decades of centuries, reaffirmed. The book will do much good.

REVIEW DE PSYCHIATRIE INFECTIOUS MALADIES AND EPILEPSIA. The influence of infectious diseases on the access of epileptic convulsions is the subject of an interesting clinical contribution by M. M. Toulouse and Marchand in "Psychiatrie" for May, showing amelioration following erysipelas modifications in typhoid and suspension during the fibrile period of pneumonia. While the conclusions are not conclusive, they are interesting and suggestive of the value of further tabulated investigation in this direction.

HAY FEVER. Its Successful Treatment by Hollopeter is again on our table as a second edition. We have nothing to detract from the good opinion expressed in our review of the first edition. The present edition sustains the good opinion expressed of the first.

THE KANSAS CITY MEDICAL INDEX and the *Kansas City Lancet* are now one journal, to be known as the *Medical Index-Lancet*. Dr. John Puzton, formerly of the *Lancet*, editor and publisher. We wish this new partnership of the editorial twins prosperity, happiness and happy life of pleasure, such as is so common to the corps editorial, especially when two good journals become one better, as with the *Index* and *Lancet*.

REPRINTS.

The Supreme Court of Santiago de Cuba. By Clark Bell, Esq., with the Collaboration of the Judges of that Court. Chief Justice, Urbano, Sanchez, Hechavarria; President de Sala, Eudaldo Tamayo; Associate Justice, Luis Gaston; Associate Justice, Jose Varela; Associate Justice, M. J. Manduley, and the Attorney General of the Court, Alfredo Betancourt.

The Relations of Movable Kidney and Appendicitis to Each Other and to the Practice of Modern Gynæcology. By George M. Edebohls, A.M...M.D., Professor of Diseases of Women, New York Post-Graduate School; Gynæcologist, St. Francis' Hospital; Consulting Gynæcologist, St. John's Hospital.

Some of the Problems of the Alienist. By Frederick Peterson, M.D., President of the New York Neurological Society, President of the Board of Managers of Craig Colony for Epileptics; Chief of Clinic, Department for Nervous and Mental Diseases, Columbia University.

Anthropological Investigations on One Thousand White and Colored Children of Both Sexes, The Inmates of the New York Juvenile Asylum, With Additional Notes on One Hundred Colored Children of the New York Orphan Asylum. By Dr. Ales Hrdlicka.

Acetosoluble Albumin in the Urine. A Brief Review of the Literature on the subject and a Report of Two Cases. By W. M. L. Coplin, M.D., of Philadelphia, Professor of Pathology in the Jefferson Medical College.

Paranomia, Visual and Myotactic. Non-Recollection Aphasia for Names of Objects Seen and Felt. By F. W. Langdon, M. D., of Cincinnati, Ohio, Neurologist to the Cincinnati Hospital.

Symptoms Following Lumbar Puncture in Tabes Dorsalis. By Warren

L. Babcock, M. D., Second Assistant Physician, St. Lawrence State Hospital, Ogdensburg, N. Y.

Tumor of the Spine; Compression Myelitis; Operation; Death on the Ninth Day. By J. T. Eskridge, M.D., and Edmund J. A. Rogers, M. D., of Denver, Colo.

A Vesico-Vaginal Opening as a Means of Bladder Drainage in Extensive Plastic Work on the Urethra. By H. S. Crossen, M. D., St. Louis, Missouri.

The Hernia Guarantee and the Minimum of Confinement After Operations for Appendicitis With and Without Pus. By Geo. M. Edebohls, A.M., M.D., New York.

Chronic Appendicitis the Chief Symptom and Most Important Complication of Movable Right Kidney. By George M. Edebohls, A.M., M. D.

The Question of Inflating the Bladder With Air, Preliminary to the Bottoni Operation. By Bransford Lewis, M. D., St. Louis, Mo.

Some of the Therapeutic Properties of the Thyroid Gland. By J. T. Eskridge, M. D., Neurologist to St. Luke's Hospital, Denver, Col.

Epilepsy; State Institutions for Epileptics. By William Francis Drewry, M.D., Superintendent Central State Hospital, Petersburg, Va.

Urotopin in Cystitis. By J. B. McGee, M.D., Professor of Therapeutics, College of Physicians and Surgeons, Cleveland, Ohio.

Appendicitis. Observations on Sixty-two Operations in the Attack, With Two Deaths. By Geo. W. Crile, M. D., Cleveland.

Appendicitis or Salpingitis with Complications, and a Report of Some Unusual Cases. By Thomas H. Hawkins, A.M., M.D.

Chronic Nephritis Affecting a Movable Kidney as an Indication for Nephropexy. By George M. Edebohls, M.D., of New York.

Cerebral Hemorrhage with Temporary Glycosuria: Report of Case. By R. B. H. Gradwohl, M. D., St. Louis, Mo.

A Glance at Psychiatry and Neurology, as it Exists To-day, and in the Olden Times. By Alexander L. Hodgdon, M.D.

Functional Neuroses and Their Relation to the Diseases Peculiar to Women. By H. J. Boldt, M.D., New York.

The American Government and People and the English Home Secretary. By Clark Bell, Esq., of the New York Bar.

Deux Cas D'Ophthalmoplegie Externe Chez Deux Freres Jumeaux. Par Le Prof. E. A. Homén (Helsingfors).

Traumatism of the Eyeball Involving the Crystalline Lens. By Cassius D. Wescott, M. D., Chicago, Ills.

A Study in the Psycho-Physics of Masturbation. By W. Xavier Sudduth, A.M., M.D., F. R. M. S.

Kleiner Beitrag zur Syphilis Tabes-Frage. Von Prof. E. A. Homén in Helsingfors, (Finland).

Shall Patients be Informed that They Have Cancer or Syphilis? By C. C. Mapes, Louisville.

Some Misapprehensions as to the Simplified Nomenclature of Anatomy. By Burt G. Wilder.

Bidrag till Kändedomen om Ophthalmoplegia Externa. Af E. A. Homén. Helsingfors, 1898.

The Standardization of Drugs and the Forthcoming Revision of the Pharmacopœia.

A Study in the Psychology of Music. By W. Xavier Sudduth, A. M., M.D., Chicago.

The General Health and the Upper Air-Passages. By J. C. Mulhall, M. D., St. Louis.

Lèpre et Aliénation. Par le Professeur Paul Kovalevsky, (de Saint-Petersbourg).

Medical Education. By Leo M. Crafts, B.L., M.D., (Harv.), Minneapolis.

Bidrag till Syphilis-Tabes-Fragan. E. A. Homén, Helsingfors, 1899.

Treatment of Insanity. By F. W. Langdon, M. D., Cincinnati.

The Technique of Radiography. By Alex. L. Hodgdon, M.D.

The Care of Chronic Epileptics. By W. W. Ireland, M.D.

The Physician in Practice. By Leo M. Crafts, B.L., M.D.

Melancholia. By W. Xavier Sudduth, M. D., Chicago, Ill.

PUBLISHERS' DEPARTMENT.

The Antitoxic Properties of the Central Nervous System.—In connection with Ehrlich's theory of the direct chemical action of toxin upon antitoxin, the author has made some studies of the antitoxic properties of the central nervous system. Ehrlich holds that the specific atomic grouping of the germ poison possesses a fixed relationship to certain atomic groupings normally present in the body. An active immunity rests upon an increased production of these same substances which, according to Ehrlich, are certain side chains of the cell protoplasm which have been thrown off.

Wassermann and Takaki have endeavored to prove the presence of an antitoxic substance for tetanus in a non-immunized animal. The power of the tetanus poison to attack the central nervous system might indicate that probably the combination of the poison with the corresponding specific atom grouping of the nervous system took place. If such a chemical combination can take place in the animal body there are no good reasons why an analogous process should not take place outside of the animal body. Wassermann and Takaki have shown that the brain and spinal cord neutralize tetanus poison in a test glass. This result naturally leads to the question—may there not be a similar relationship between the diphtheria poison and various organs of the normal body. The author examined various organs of an animal which had served as the source of large quantities of antitoxin for diphtheria, but could not detect the presence of antitoxin in the brain or spinal cord. The author made some experiments upon rabbits and guinea-pigs, which showed that the brain and spinal cord of these animals rubbed into an emulsion and mixed with the diphtheria toxin did not counteract the characteristic diphtheria poison and showed further that there is no similar relationship between the cells of these organs and the diphtheria poison similar to that which apparently exists between the central nervous system and tetanus poison. Dr. Bomstein. Ueber die antitoxischen Eigenenschaften des Centralnervensystems. Central-Blatt für Bakt., vol. xxiii, No. 14, April 12, 1898.—Abstracted by E. A. De Schweinitz, Ph. D., M. D.—*The National Medical Review.*

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Neurology.—Charles W. Hitchcock, M. D., Detroit, Mich., attending neurologist to Harper Hospital, makes the following notes in the *Medical Age*.

Three important and practical papers were read at the recent meeting at Kalamazoo upon neurological topics. The first, by the able and courteous superintendent of the Michigan Asylum for the Insane, Dr. W. M. Edwards, directed timely attention to the importance of the early recognition of insanity and the greater possibility of recovery where early and proper change of environment was sought and the cases placed under intelligent observation and treatment. He cited a number of senile and chronic cases which sought admission to the asylum only because some changed domestic conditions made it inconvenient to care for them at home. Too frequently the burden of care is shifted onto the State, from motives of family convenience rather than from any actual necessities of the case, and without reference to any possible benefits of treatment.

Dr. David Inglis presented most interestingly some thoughts upon the subject of moral imbecility, calling attention to this important class of cases, upon which the profession should be better informed, especially as the legal mind is much inclined to look askance at the existence of any such form of insanity. He cited a recent case, in which the principal committed a foul murder, which his congenitally defective make-up effectually made it impossible for him to adequately appreciate.

Dr. G. Carl Huber, of Ann Arbor, read a most valuable paper upon the minute anatomy of the sympathetic nervous system and its relations to the cerebrospinal system, detailing briefly the development by the histologists of the neuron theory, the fact that is now well established that the conveyance of nerve impulses is by contiguity rather than by continuity, that the peripheral terminals are of several kinds, etc. The histologists now tell us that we must give up the old ideas concerning the part played by the cerebrospinal system in the innervation of unstriped muscular tissue—that, for instance, the former idea is now proved as erroneous, that fibers of the pneumo-gastric end in the heart and there play an important inhibitory function. For, says Dr. Huber, recent work goes to show most conclusively that all unstriped muscular tissue is innervated from the sympathetic and not from the cerebrospinal system. The connection between the two, however, is very close, fibers passing between the roots of the spinal nerves and the sympathetic trunk. Their intimate connection was gone into in detail, but the above will serve as the salient points of this most interesting paper.

Russian Medical Institutions.—Dr. S. M. Malischew (*Deutsche Med. Woch.*, No. 14) describes Russian medical service as follows: Russia is divided into 97 governments. Two-thirds of these are governed each by an official appointed by the State, and the other third by a local institution known as the Semstwo, which has charge of the affairs of the government, including the medical and sanitary. The Semstwo of the Moscow government was the first established (1864), and possesses an ideal medico-sanitary organization, from which the rest were modeled. It has a population of

a million and a half, and yet the medical service is so arranged that it is within the reach of all, effective and fruitful of results. This is accomplished by dividing the government into 118 medical districts. The physician in chief of each district resides in the hospital erected in the center of the district, and takes charge of the sick in the country around for a distance of twelve wersts. (One werst=1,066,781 meters.) The hospital has usually a capacity of twelve to fifteen beds, dispensary, etc., with a pavilion apart for maternity cases and another on the other side for contagious diseases. In ten of the districts there is also a building for chronic patients. All these hospitals and the medical assistance, dressings, etc., are free. Vaccination and sanitary oversight of the schools are also in the hands of the head physician, who has an assistant where needed. The sanitary conditions of the government are in charge of a corps of eight or nine special physicians, some of whom coöperate in recording the medical statistics of the government. The physician receives his residence free, heated and lighted, and also free transportation and 100 to 150 roubles a month. (The rouble=about 55 cents.) The administration of the affairs of the medical department is in the hands of what is called the Health Council, composed of all the district physicians, and five or six members of the Semstwo. This coöperation of medical men and the officials best acquainted with the economic and financial conditions, etc., of the government, results in fruitful action. There is besides all this a vaccine institute, a colony for the insane near Moscow with 1700 acres of land, and a medico-statistic bureau in Moscow. Every two or three years all the physicians in the government meet in a general congress, the transactions of which are published. The expense of all these institutions amounts to almost a million roubles, part of which is contributed by manufacturing firms and landed proprietors. The state is planning to introduce the Semstwo into other governments as soon as possible, but has slightly restricted its independence of action since 1890.

The Nutrient Trinity.—Trophonine, protonucleine and peptenzyme make an unsurpassable nutrient trinity.

We have been asked to speak a word for them but try them clinically and they speak for themselves. Trophonine, palatable, nutritious containing the elements of beef, egg, albumen and wheat gluten prepared for ready absorption and assimilation; protonuclein increasing the number of leucogitis increasing resistance to disease, glandular activity, arousing the nutritive forces, giving tone to the system and stimulating cell life are ideal nutrients promotes their digestion and the digestion of all food. What better trio of therapeutic resources could be at hand to fulfill indications of organic reconstruction? Reason and clinical experience both confirm their value. We prescribe them of course and get satisfactory results.

The Intelligent Use of Hematic Hypophosphites.—It must be borne in mind that Parke, Davis & Co.'s sales of Hematic Hypophosphites are governed by professional demand *entirely*, that this medicine is not

THE
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ORIGINAL CONTRIBUTIONS.

**OUTLINE OF PSYCHIATRY IN CLINICAL
LECTURES.***

PSYCHO-PHYSIOLOGICAL INTRODUCTION.

By DR. C. WERNICKE,
Professor in Breslau.

VIII.

THE ACTION OF CONSCIOUSNESS DEPENDS ON THE CONTENT OF CONSCIOUSNESS. PREFORMED ORDER OF THOUGHT CONNECTIONS. NARROWNESS OF CONSCIOUSNESS. DEGREE OF CONSCIOUSNESS, ATTENTION AND WILL. ABILITY TO ATTEND. AFFECTS. NORMAL QUANTIVALENCE OF IDEAS.

We will glance back over the path we have come. The organ of consciousness is now shown to be populated by a sum of potential energies, the memorial images and their various groupings, from the simplest to the complex, for which the term remembrances seems adapted. The natural classification of this content of consciousness into the three divisions of the world, body and personality has been given, a classification, which, as we will see later, is

*Translated by Dr. W. Alfred McCorn, Resident Physician "River Crest," Astoria, L. I., New York City.

required for the practical observation of patients. But observe, that in this, as it were, inactive consciousness you have an inanimate machine. It will now be our purpose to consider more fully the action, which occurs in the organ of consciousness thus constituted. But we must maintain, that this organ is exclusively composed of nerve fibres and ganglion cells, that we then can only require of it the course of certain processes of excitement and in its diseases a morbid change in these processes of excitement. What we had previously considered, had no other premises, for the content of consciousness, the sum of all the acquired ideas had for us no other meaning than a permanent molecular change in definitely organized fibre and cell masses in consequence of processes of excitement having occurred. The capacity of nervous elements to be permanently changed by past stimuli, we called memory, a phenomenon which has its counterpart in inanimate nature in the magnetization of iron. We then have to deal with existing processes of excitement in a complicated organ whose action definitely depends on prior processes of excitement, and next have to investigate in what way this dependence is manifested.

If we ask a question of a person about some science, with which he is unfamiliar, the sense of the question is not comprehended. No one will be astonished, and yet this example proves the fundamental proposition, that any new possession of ideas, here the comprehension of the question, can only be attained by the presumption of the present possession being definitely constituted. We designate this process, occurring at the time in the consciousness, thought, the idea excited by the question the initial idea, and the result of thought, which is contained in the answer, the terminal idea, so in the above example thought did not occur, because the proper initial idea was not in the individual's possession. Hence if we maintain, that thought as a rule follows an external stimulus, some sense perception, it then very gradually seems necessary that the sense perception be understood. A sense perception, which has never occurred before, does not therefore follow the usual

course of a definite thought; for it is not only uncomprehended, but very imperfectly received, as anyone may observe when listening to the sounds of a foreign language. The perception then presumes, for it to be perfect, a definite mental possession. Very similar to this simple example of thought is it with the more complicated processes of thinking, in which the initial idea is often a very ordinary sense impression and may therefore escape our attention. These more complicated processes of thinking are generally carried on in previously worn paths, hence the comparative rarity of really new thoughts. Thought is universally dependent on a possession of ideas long acquired and definitely arranged, in other words, it is generally a mere repetition of the same processes of excitement in the same arrangement as they have repeatedly occurred.

On what does this arrangement dominant in our ideas depend, which is manifested in normal thought? As you recollect, we called the union of ideas association, the arrangement dominant in the ideas may then lead us to conclude the possession of definite associations, which are approximately the same in all individuals. Our question then will be: In what way are these associations generally present formed? In part I may add what has already been said and is familiar to you. In speaking of the consciousness of the world I have already called attention to the fact, that in a certain measure the natural arrangement and sequence of things are reflected in our brain, and thus a regular union of definite phenomena with each other occurs in our consciousness, as furnished by the world. To the attributes of things, which we have found to be quite constant and little changeable, belong also their relations to other things, be they animate, be they inanimate, and particularly to our person. That ice comes from water when it is frozen, and steam when it is boiled, is an experience, which we consider regular, owing to its constant occurrence. It is thus reflected in our brain that an association between the ideas of water, ice, steam, cold and hot occurs in a definite order. The sensation of cold to the skin can awaken the idea by

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association that the water is freezing. The association is somewhat complex when the observation of the thermometer leads to the same conclusion. Here an optical perception is the initial idea and the association with other ideas learned. If the simplest phenomena of nature are forced upon us in their regular order, so it is the same with the more complex combinations of ideas, which we learn by the example of our surroundings. The congenital desire for food is analogous to the impulse with which the phenomena of nature are forced upon our brain. If we have always been in the habit of behaving the same as others in like position, so one learns by the crudest senses from the example of others, that potatoes are dug and cooked to satisfy hunger, then the simplest example is sufficient, that the potatoes must be planted to appease hunger later, where the planting of the potatoes is the terminal idea of a very complex action, which is finally produced by the initial idea of hunger, after the interpolation of a whole series of associations. In the simplest relations all action is governed by examples from the surroundings. The medium, in which a person grows up and lives, suffices to fill the consciousness with a whole series of ideas in a definite order, and the more monotonous the life, the more fixed and unchangeable is this order of ideas, undisturbed by the variety of complicated conditions of life. The focal consciousness, that one has to behave like others, is frequently active when thought, in consequence of mental disease, is wholly perverse: the uncontrollable and resistive patient is often rendered tractable by the example of his fellows. The entire institutional treatment of the insane rests on this principle. On the other hand how thoroughly innate the focal consciousness is in us, may be learned, when in a crowd one participates in some general demonstration with the intention of remaining passive, yet becomes active through the feeling the crowd inspires. The untutored deaf mute may be instructed by example. If no other defect exists, such a person often becomes a useful member of society within a certain narrow sphere of life.

Articulate language is still the chief means for the acquirement of definite order in the ideas. It readily establishes the finer and more exact relation, not only between the concepts of concrete objects, but between these and the results of actions, arrange the latter in point of time and distinguish by fine shading the position of the active personality. For definite complex associations, the *abstract concepts*, which are first made known to us in part by language, suggest abbreviating terms, so that we learn to use whole series of ideas, and by such abbreviations designate 'definite states of the personality, which everyone is acquainted with empirically, like love, hatred, fear, anxiety, hope, solicitude, etc. In such expressions a whole series of occurrences are at our command in a sort of combination, which is comparable to the concept of concrete objects. The structure of sentences, their logical organization gradually results that we think according to their direction. This at least chiefly differentiates the educated from the uneducated person, for the first is able to use every logical shade of expression.

What I have just said needs further elaboration; you might readily fancy I would identify language and thought. I am far from it, but would merely call attention to the fact, that for the comprehension of language not only familiarity with that spoken, but also the possession of the same ideas as the speakers, is an indispensable presumption. We then assume a certain uniformity of mental personalities, while heretofore we have placed their individual variations, in the foreground. And there is no mistake that the transmitted possession, which we have retained in language by the construction of sentences and the terms for abstract concepts, is chiefly to blame. In all variation of the social medium the epoch, in which we live, still conditions for all normal individuals a definite possession of identical combinations of thought, hence in this respect it is necessary to caution against overestimating the variation of individuals. For psychiatry this is certainly a favorable factor, which facilitates clinical observation.

The question is often argued; whether thought occurs chiefly in words, and how far it depends on them. Many teachers have favored such a dependence and cited the abstract concepts as evidence, that coordinated thought cannot dispense with the abbreviations contained in language. But these abstractions are in great part merely the means of communication, and it is to me incomprehensible how anyone, who accepts the present theory of aphasic states, can think that a person with total aphasia has lost the concept of faith, love, hope, of fear, anguish, hatred, sorrow, solicitude, etc., or of state, society, religion, time and space. The patient's conduct does not indicate it. As much as may the word be associated with a whole series of ideas, still the decisive factor is not the association with the words, but the association of these series of concepts with each other, may it have first been acquired by the word. Language is merely the means of adjustment, the task-master, by means of which of the idea the ideas are forever arranged in series.

What we have above designated as thought, is well illustrated by the process, which Fechner has called psychophysical movement. This psychophysical movement has been compared by Fechner to the course of a wave of excitement, which we may regard as occurring between the initial and terminal ideas. It is evident that we thus transfer the view we had of the course of the process of excitement in a definite nerve area to a whole system of fibres and ganglion cells continuous with each other, and as continuous as are the various early acquired associations. The error is the same as though we compared the movement of a wheel to that of the whole machine, yet in both cases it is a matter of similar processes of movement. If we suppose, for illustration, the curve of the process of excitement is drawn upon a system of ordinates, the form of the curve is of interest to us. We have to consider the spatially extended consciousness of the body to be the axis of the absciss. Over this the curve as an even elevation, must embrace its whole extent, for the consciousness of our

body continually accompanies us while awake, if only in a moderate degree of excitement. If we conform to the use of language, in which by consciousness is understood not its content, but its action also, or the process of excitement reflected in it, so we must differentiate the degree of consciousness in this respect. The degree of consciousness in the curve is expressed by the height of the ordinate, while its extent corresponds to the length of the absciss. If it is a consciousness of low degree, such as we constantly have of our body, and which can never be lost while awake, it follows that the stimuli of the world continually act on the body, and the concept of the body has to be regarded as such a fixed unit, that it is always excited as a whole. By this equable elevation quite a marked wave crest is somewhere produced, indicating the instant of the greatest state of excitement. It is a condition of the human brain that only *one* such wave crest can occur at a certain time. The wave crest indicates the highest degree of consciousness, the greatest intensity of the process of excitement and is empirically always present only once in a unit of time. It was then very pertinent, when we represented the wave of excitement as changing in the psychophysical movement, and it is the wave crest, the second elevation, which essentially changes its place, while the first stage of the elevation continues its whole extent.

The fact that only one wave crest is ever present in any curve, has given rise to the term unit or *narrowness of consciousness*. It is impossible to think, to do or perceive two things at the same time. The astronomer, in measuring time by the pendulum beat as the star passes the wires of the transit, either sees the star and then hears the pendulum beat, or hears the pendulum and then sees the star, and between both factors an appreciable time elapses, which varies in different observers, yet occurs in everyone and is taken into account as the astronomical or personal equation in comparing the results of different observers. In this example the wave crest must be considered as changing from the central projection field of optic perception

to the acoustic. The fact of the unit or narrowness of consciousness leads to the supposition that the spatial content of the curve, if it can be computed, always remains the same, in other words, that only a definite supply of living force is ever present in the brain for the course of the psychophysical movement. Fechner has illustrated this proposition by the following example: The miller, who is accustomed to sleep amid the clatter of the mill, awakes as soon as the mill stops. It must be accepted that the acoustic perception of the mill's noise has maintained a psychophysical movement in the acoustic projection field of the sleeper, which now suddenly disappears; thus the psychophysical movement undergoes such an increase in some other part of the brain, that the degree of consciousness of the awake state is attained. Quite a large number of similar examples may be cited. The further conclusion may be drawn from them, that the spatial content of the curve remains the same while asleep, but the form of the curve differs from that while awake by the above described characteristic wave crest being more pronounced. Still Fechner had advanced the supposition, that being asleep and awake differ in that the place of the psychophysical movement would be different, what is correct in so far as the form of the curve will be admitted to influence it.

If the wave crest is termed the place of the most intense action of thought, the nearest associated ideas must be regarded as contained in the ascending and descending limbs of the curve, hence the continuity of thought between the initial and terminal ideas.

We have various terms for the change of the wave crest, we speak of attention, when it is a matter of perception or thought, of will when acts or a process of association, which precedes them, is in question. Take a definite instance, like the contemplation of a work of art. The attention is then engaged for a long time with an optical perception, therefore the wave crest must be in the central projection field of the optic nerve. Under the influence of this wave crest all associated ideas

are called into consciousness one after another, this is the purpose of contemplation. The attention directed to an object then corresponds to a thought, in which, wholly without our assistance, a large number of preformed processes of association is raised above the "threshold of consciousness." As this fact is a common experience, we believe we are able to voluntarily direct our attention, a delusion, analogous to that of self-consciousness. The more closely a person's attention is directed to the work of art, the more the consciousness of the world and the body, as well as that of the personality recedes. Absorbed in contemplation one may forget where and who he is, but the consciousness of the body is shown to be retained, by the fact that he involuntarily changes his position, turns aside, makes movements of defense, etc., according to circumstances. The dominating wave crest in a certain measure takes a piece out of the consciousness of the body, in which optical organic feelings of special intensity must exist, in any further relation the process is incapable of localization. While the attention was occupied with a definite part of the world, it is immediately diverted and turned to the body, if a pain or an unpleasant sensation affects some part of the anatomy. If very intense, like a violent toothache, our impotency is at once shown by the attention being diverted by our senses. If the work of art, which causes the sense perception, is still present, the processes of association are stored up, as shortly before, but they are now inert, for the wave crest relates to the consciousness of the body and to a definite area. A very intense pain renders thought impossible, what the disciples of Zeno have always opposed. The pain may be borne, but certainly the attention cannot be voluntarily directed to any object. Irrespective of the intensity of the stimulus, which has affected some organ, it here depends upon the associations, which more or less accidentally confer great significance to the momentary discomfort: the least hoarseness catches the singer's attention, the slightest injury to the foot occupies the tourist's completely. The so-called liminal value of sensations depends

in all senses on the presence of general attention. The fact, that it has a definite quantity varying but little in all persons, leads us to conclude, that the attention or, in other words, the height of the ordinate of the wave crest is nearly the same in all normal persons. The limnal value may be extensive, as in measuring the visual field, and certain concentric contractions in the clinical picture of anaesthesia retinae, simply indicate a lowering of attention. In the neuroses after head injuries, railroad accidents, etc., this lowering of attention plays a great role, and no less in the insane.

Gentlemen, you perceive from these remarks, that we possess a means of measuring attention by determining the limnal value of sensations, *i. e.*, the height of the ordinate in the process of excitement attainable by the organ of consciousness subjected to investigation. In the examination of nervous patients this factor is to be taken into account and the procedure so conducted, that the patients are incited to direct their attention at the moment of the examination to the place and kind of examination. You remember I presented to you a patient, in whom it was within my power to demonstrate either a total cutaneous anaesthesia or normal tactile sensibility, according to the method of examination. We then hold, that a lowering of this limnal value under certain conditions indicates a lowering of the degree of consciousness.

The capacity for normal attention is essential for the acquirement of new memorial images and ideas. In the future we will call this attribute of consciousness the *ability to attend* and understand by it something which is comprehended by memory in the ordinary use of the term. To avoid future misconceptions in this matter, I propose hereafter to speak of memory only in the sense that it refers to the old acquired possession of ideas, while by the ability to attend we understand the ability "to impress something on the memory." We may test this ability by giving the patient a problem, a number of several units, a foreign sounding word, etc., to remember. If lost or lowered, it

may be due under certain conditions to a lowering of the attention. But you will later become acquainted with cases of disease, in which the attention is well retained, but the ability to attend is very markedly lessened. We therefore perceive in the ability to attend a means of testing the action of the organ of consciousness, which depends on an independent and conditional attribute of the nervous elements dependent on attention.

A similar relation, as between attention and the ability to attend, we also find between the ability to attend and that of *recollection*. The above mentioned test of the ability to attend reveals to us that under certain conditions *memory defects* are observed. In the above mentioned test they merely consist in forgetting a definite task given the patient. But from my last lecture you will have gathered, that these memory defects often embrace a very long period of time, so that all impressions, events, opinions and knowledge gained within it, seem to be effaced from the memory. We very often meet with the same phenomenon in the insane, or after the course of the mental disease for its whole period or certain portions of it. If the ability of these patients to attend has been tested, and it has been found that it was lost or diminished, hence the memory defect appears to be the readily comprehensible result of lowered ability to attend at the time memories should have been acquired. Still the conclusion, that a memory defect is always due to a loss of the ability to attend in a given period is not justified. Doubtless there are memory defects of other origin. I refer to the remarkable cases of so-called amnesia retroactiva, where a cranial trauma, an epileptic or apoplectic attack had completely extinguished the memory, not only of the time following, but also of the events shortly prior to the accident, then the recollection at the time of complete mental clearness and health. The above cited cases of general weakness of memory may also indicate such a retroactive effect of the disease, which conditions their origin. But subsequently their ability to attend is seen to be very materially lowered permanently.

The gradual gradations from consciousness to unconsciousness are generally distinguished as states of the sensorium by the subdivisions of stupor, somnolency and coma. Still it is not ordinary usage to speak of stupor in such slightly lowered action of the consciousness, that a special examination is necessary to prove it. In the insane we will only exceptionally meet with noticeable stupor, while lowered attention and ability to attend are common.

Gentlemen! We now come to a series of phenomena, which I have heretofore avoided intentionally, but which very often exercise on the process of thinking a very definite, as well as disturbing and inhibitory influence. These are the affective conditions or affects. We are as little able to define affective conditions, as we are pain; both are facts of inward experience, whose identity we presume in all persons, because their expressions and conduct permit this conclusion. We know that pain has its counterpart, the feeling of pleasure. We also know that pain occurs under certain conditions, which may be stated in a general way, that those excitations produce pain, which are too intense for the useful function of the nerves, the conduction of sense impressions, and injure the nerves. We further know that pain occurs when the isolated conduction is broken and the gray matter of the spinal cord encroached upon. Pain is an affection of this gray matter and seems not to occur without it. All this does not give a definition of pain, but shows that it has a definite purpose, an attribute, which must be ascribed to the simplest nervous system and not to vertebrates alone, and furnishes creatures with a sort of alarm signal for the avoidance of such agencies as might injure the structure of the nervous system. Its opposite, namely a nerve excitation conducive to the individual's welfare, seems to induce the simple feelings of pleasure, like that of sensual gratification, sensual pleasure, etc. The same relation the feelings of pleasure and pain have to the spinal organization, the affects seem to possess for the organ of consciousness, yet we cannot here state with certainty that the gray matter is the

sole bearer of this phenomenon. All that is compatible to the consciousness of the personality, to the me, produces a pleasant, what is incompatible, an unpleasant affective state. According to the degree of this affective state, we speak of affect or mood. Here it is also a matter of arrangement for defense, which may be acquired by the brain in the course of its development. Normally all complex processes of association, thinking, as we call it, are accompanied by a moderate affect, a sort of pleasant self-feeling (see above), which Griesinger has aptly termed the psychical tone. This calm, slightly exalted mood of the person in health does not impair the act of thinking, as well as other affects when only of moderate intensity. This even, quiet course of thought we distinguish as the state of self-possession. In all intense, stormy affects, be they of extreme joy or sorrow, anger and rage, the self-possession is lost and the ideas no longer occur in their inherent, preformed order, but are under the biased control of certain dominating thoughts, which perhaps may be equalized by counter ideas. A sort of inhibition of thought thus occurs, for the counter ideas arise by intimation and again disappear, so that a train of thought cannot be followed; we name this state distraction.

Gentlemen, permit me to speak of the fact I have recently mentioned, that every thought is normally combined with a slight affect. After the somewhat teleological definition of affects I have given you, you will not be surprised that the content of the ideas in thinking influences the attending affect. If we assume that a train of thought, which with respect to its contents is advantageous to the individual, has often been repeated, a condition, which is intentional brought about, *e. g.*, for the purpose of education and the formation of character, we will encounter in the mental possession of this individual a group of ideas, which is united with an intensely pleasant affect. Other groups of ideas of the same individual of such kind are acquired, that an intensely unpleasant affect is permanently attached to them. Apart from the excitability of certain groups of

ideas, the readiness of their reproduction or facility of recall will depend on, whether they have been used frequently or rarely. Both conditions are especially clear, when it is a matter of a train of thought, which may be the motives of a person's acts. In this sense we understand by *normal quantivalence of ideas* a very definite gradation of the relations of excitability, which vary in different individuals within a certain limit, yet in each individual conditions in a certain measure a preformed possession from differences of quality among the ideas. The content of the consciousness of the personality thus acquires its diversity and its individual color. The variation in character is essentially conditioned by the different quantivalence of those ideas, on which depend its actions under specified relations. In the norm we must take account of the fact that such *superquantivalent ideas* are difficultly accessible of correction by counter ideas and accordingly become the unconditional presumption for the action. The concepts of honor, modesty, chastity, etc., are such motives for the action of moral individuals. We desire of the action of the consciousness, that the normal quantivalence of the ideas appear. In the insane we will often meet with deviations from this normal quantivalence of ideas.

PART II.

PARANOIAC STATES.

IX.

SYNOPSIS OF THE CLINICAL PROBLEMS. MENTAL DERANGEMENT. MENTAL DISEASE. PARANOIC STATES. THE UNCURED INSANE. PRESENTATION OF CASES.

Ere we undertake the clinical examination of the insane, we will glance cursorily at the problems confronting us. In general terms we call the subject of our study *mental derangement*, an expression that is current among the laity and well adapted to designate all mental states deviating from the standard. Of these we will purposely choose for study the simplest, *i. e.*, those we may hope to understand

without the possession of special preliminary knowledge other than the general views, which have been the subject of our previous discourses. The simplest states of the kind are the changes in the contents of consciousness existing after a mental disease, which fall into large groups, accordingly as they are qualitative: falsifications of consciousness, or quantitative: defective states of consciousness. We meet with far more complex pathological phenomena in the real *mental diseases*, and the more acute and intense their course. The contrast lies between latent states and terminal disease processes, and it is quite natural that the first offer fewer difficulties for the comprehension. If we call to mind the previously established contrast between the contents and the action of consciousness, we have here exactly the same relations. We then find relative by the simplest conditions, when we take up the changes in the contents of consciousness in normal or approximately normal action of consciousness. Whereas during the course of mental disease we witness the abnormal action of consciousness. As the action of consciousness is a function of time, its product definite contents of consciousness, we may therefore define acute mental diseases to be the change in the contents of consciousness, which we see consummated within a definite period. According to the stipulations of normal mental life such changes are combined with various emotions and affective conditions. Acute mental diseases are therefore almost universally accompanied by active emotions, and by the way, it is these, which render difficult the comprehension and treatment of the acute mental diseases. The shorter the duration of the acute mental disease, the more intense will be generally the attending affect, and so, in case it does not terminate in recovery, the greater will be the resulting change in the contents of consciousness, whether qualitative or quantitative.

If we still have to suppose that equally normal intellectual action may occur when the consciousness varies greatly as to the richness of its contents, you will not then

question, that among the persons previously mentioned (1) using only a small number of concepts, proportionately just as many intelligent individuals will be met with as among the representatives of quite extensive knowledge.

Gentlemen! Our next task will then be to become acquainted with cases of mental derangement, which after the mental disease present their residues in form of changed or defective contents of consciousness. The action of consciousness is again normal, the grave affects, which accompanied this change, have disappeared. The patients therefore are not entirely free from affects, but in general free from morbid affects, so that the latter, even when they are connected with the changed contents of consciousness, are not special symptoms, but comprehensible by the same standard as in the sane. We now find a very similar condition in many chronic mental diseases. These present us the picture of a slow and gradually effected change in the contents of consciousness, a process then that also happens to the normal organ of consciousness, but is here due to internal morbid changes in the organ. The contents of consciousness of sane individuals actually undergoes a constant increase even to very old age. This applies especially to the consciousness of the personality, for it implies the sum of the original data. When the parity is effected by slow disease processes, we observed a very gradual change in the personality, without the normal preliminary conditions of the change being given in external relations. The intense affects, which are not spared the sane, will often start from the morbidly changed contents of the personality, without it being morbid of itself. If we try to complete the analogy with brain diseases, the gradual change in the contents of consciousness is to be compared to the gradual aggregate of focal symptoms in the instance of a tumor of slow growth and replacing the brain matter (not merely pressing upon it). As in such cases, the symptoms of the mental disease of an extremely chronic course bear the stamp of incurability from the first, which in this instance is due to

(1) *Allenist and Neurologist*, Vol. XX, p. 166.

the complete fusion with the normal contents of consciousness, in the former to the purely local effect of the destruction. It is almost superfluous to say, that just as the changes in the contents after acute mental diseases—with exceptions still to be mentioned—represent incurable states, our clinical material will chiefly consist of incurable, so-called "old cases," and also of certain, still progressive, cases very closely related, but fixed in their external manner and manifestations of the action of consciousness. The majority of inmates of many years standing in large insane asylums consists of such patients, without the proper value usually being placed on their differentiation into two categories, afforded by their mode of origin. If from this material we eliminate the defective states, we may embrace the still very large number of cases remaining under the name of *paranoic states*, because they present the common sign of a pathological change in the contents of consciousness, in other words, a falsification of consciousness. The falsification of the contents of consciousness is either residuary, when the result of a mental disease, or the expression of a chronic progressive mental disorder.

For a further classification of the *residuary falsification of consciousness*, their extent will naturally be decisive. We have seen, that we may speak of three different parts of consciousness: the personality, the world and the body; for brief designation of symptoms occurring in each of these I propose the terms autopsychical, allopsychical and somatopsychical. It is a matter of *residuary autopsychical falsification of consciousness*, e. g., in all of those numerous cases, which may be discharged improved after the mental disease and cannot be called recovered, for they do not have a perfect appreciation of the disease (see Alienist and Neurologist, Vol. XX, p. 378). The false ideas, chiefly false judgments, of these individuals usually refer to their treatment and the necessity of detention in the asylum, to which they owe their relative recovery, and as they are strengthened in their opinion by similar false judgments of other patients at the time of their asylum residence and

believe to have witnesses in them, so is it explainable, that, according to the temperament and character, they complain more or less energetically and bitterly of the institution and discredit it. I recall to your minds the professor and Doctor of Philosophy discharged and improved, who had again taken up teaching, and the wine merchant treated here years ago and who now has a fine business, both of whom have gone to the highest officials with their complaints of the injustice suffered at the hands of the Clinic. A part of the attacks directed of late by the press against our management of the insane may be traced to such sources.

As you see, this point is of great practical importance. Not only the alienist, but also the medical profession and the public dependent on its aid, has an interest, that the explanation be carried to the farthest limits. I therefore go somewhat more fully into it by starting from my remarks on the consciousness of the personality in my seventh lecture (1). A lack of appreciation of the disease practically amounts to the same as the increase in the aggregate of memories of a person about a certain number of data not corresponding to the reality, such as may be gotten from a dream. If we add these, often very fantastic, as actual members to our store of memories, what incalculable consequences would arise for our actions, our opinions of men! But it is exactly the same with the falsely judged data of the insane and retained as such in their memory. I must now remark that the lack of appreciation of the disease may vary in degree. In acute mental diseases it is quite common, that the acme of illness occurs in the beginning and the patients then have an appreciation¹ of the more severe symptoms of this acute stage, but not of the time following. It is natural that a certain credence is placed in the statements of such apparently rational patients who regard their admission justified, but not their retention in the asylum. If the acute stage, from which the appreciation of the disease is gained, occurs at a later period, the

(1) See *Allenist and Neurologist*, Vol. XX, p. 378.

conclusion seems authorized to the patient, as to all the laity, that the commitment to the asylum and the impressions there gotten, might have caused the disease. Further the lack of appreciation of the disease is not always an incurable condition, but it quite often occurs that the memory of the supposed facts of the illness and the affects combined with it gradually fade in the course of time, especially when the normal stimulus of regulated action is not wanting. The same patients, who have once bitterly complained, now generally refer reluctantly to their institutional life, say that it is half or wholly forgotten and their aversion for the physicians and personnel has no practical consequences. You will remember that we have repeatedly made use of this consideration, when we have favored a return to civil life and the taking up of an occupation adapted to the ability of these patients, who have not a full appreciation of their disease, in spite of our long expectation.

Unfortunately a second large category of patients is not destined to return to civil life, although their mental disease has terminated and not unfavorably. But they are distinguished from the first category by the fact, that they present, beside the complete lack of appreciation of the disease, fixed delusional ideas, which belong to the great group of *explanatory delusions* to be studied later. I have already intimated, that it is to be considered merely the logical sequence of the lack of appreciation of the disease, if these patients regard their asylum residence as a wrong done them. A step further leads to the very natural *idea of persecution*, that the purpose of the asylum residence is hostile, either to take the patient from his business, to injure him civilly, to put him away temporarily or forever, or even to make him crazy by the enforced association with the insane. There are then usually certain persons, if often merely executors of a higher power, who are regarded as persecutors and enemies. The further consolidation of this delusion system varies greatly according to the consciousness of the personality (individuality), as well as the energy of the action by reason of the motive so gained.

If the source of persecution is sought in large corporate bodies, like the church, Free Masons, or state officials, the executive organs, acting under compulsion, are occasionally blamed, but first the conjecture and later the certainty, which is the source of the persecution is directed against single persons, according to the individual data, as *e. g.*, in the common case of the husband suspecting his wife, the real purpose of the asylum residence being to make an adulterous relation possible. In such cases the physician is almost always charged with being an accomplice, and he is the next tangible accessory to the intrigue. In many cases an explanatory delusion of persecution later occasions the further explanatory delusion of *consecutive grandeur*, when the requisite co-operation of the officials very correctly leads to the opinion, that such an improper procedure can only have reference to an important person and the power of the state made to serve the purpose of the persecutor. All these patients cannot be discharged, for they do not conceal their proneness to violent and generally dangerous actions. The one root of their delusional system, the detention, is therefore not to be removed, and hence the delusional system is constantly supported and strengthened. But within the asylum in the course of time the affect may be lessened, especially by becoming habituated to useful employment, and a possibly contented existence led.

As representatives of the third category of old asylum inmates, I first present to you the patient Rother, 61 years old, whom I have known for 14 years, that is since 1871, as a terminal case of acute mental disease, of which unfortunately we have no farther data. Since then he has led an active life within the asylum, been quiet and well behaved, with the exception of brief periods of excitement at intervals of years and generally due to some interference with his work, and presents a normal physical condition. He goes in and out at will and has a key to the garden and his ward. As you see, his conduct exactly corresponds to the situation. He is polite and obliging, without being obsequious, evidently confides in the asylum physicians, is

satisfied with his home in the asylum and his work, and if he wishes to be discharged, he can be readily quieted by the assurance that here he is free from care. He seems perfectly able to take the steps necessary to secure a position after discharge. His answers are prompt and in accord with his degree of education. His circle of interests seems no narrower than may be expected after 24 years of life apart from society. He keeps informed from the papers as to the most important political data and news of the day. Attention and ability to attend may be shown to be normal. So it seems as though we have a sane person, one of those unfortunate victims of asylum physicians' neglect and unscrupulousness, who are so often wrongfully held, if you will credit the statements appearing daily in the newspapers from well meaning, but uninformed and therefore at least imprudent philanthropists. I do not doubt, that a commission of laymen permitted to discharge patients in accord with their own opinion—the general reformatory idea of these philanthropists—would pronounce the patient sane, and the more so, for he is circumspect and reticent before strangers. But he gives us his whole confidence and frankly relates his experiences, after once gotten to talk. First of all it is remarkable that he knows nothing of the mental disease he had, he came to the hospital with an acute febrile trouble and regards it really wrong or an error, that he has been kept so long, if he also admits the physicians may always have meant well by him. He tells of a fight with one of his garden hands shortly before coming to the asylum. He had been thrown down stairs by this person and had his neck broken. (Who?) (1). "Why I." (But are you not alive and sit here?) "Well, yes, but the other probably lies there still." (What other?) "Why, Rother." (Is it possible that you have been dead?) "Of course, everyone has a double."

The patient also relates that he has witnessed things,

(1) The parentheses here imply questions. Trans.

which would not be believed: he has once been a steer and as such been inhumanly tortured and then slaughtered. He describes how a ring was put through his nose and he dragged away. He has also been crucified once and with two thieves. (Like Jesus Christ?) "Yes, just so," (Are you Jesus Christ?) "Yes, I am Jesus Christ."

He further states, that he has also been Gottfried von Bouillon, and describes the armor he has worn, and he has been a blue bottle as well (he means a fly) and as such flew about.

If we here meet with the strangest ideas in the consciousness of the body and the personality, the patient no less has the most perverse ideas of the world. From the beautiful garden, where he has last worked, a pair of stairs lead down to extensive subterranean caverns. Various fabulous monsters are there: large snakes, beasts of prey. This cavern extends under all of Breslau and how much farther is unknown. The sun lights it and the earth is seen to revolve about it, like a large ball. (Does it not fall, or is it supported?) "It rests on a large pointed stone."

He has traveled extensively; In three days he walked from Europe to America over a causeway about as wide as an ordinary road. From time to time he found a tavern where he could spend the night. On each side he saw the blue sea and the most beautiful ships. He once went around the Black Sea in a few hours. They were engaged in draining it.

Regardless as to how the patient has arrived at these numerous false ideas, you will admit that it is a matter of a falsification of the contents of consciousness in the extreme. All three parts are equally affected, but in such a way that the most contradictory ideas exist simultaneously and do not interfere with each other, that the most impossible is not sensed as contradicted by actual daily experiences. In a certain measure it is a consciousness fallen to pieces, so, as you see a state of "disintegration of the individuality" completely excludes any systematization. Therefore we cannot speak of a real delusional formation,

and the absence of any delusion of persecution or grandeur occurring from logical thought will seem perfectly natural to you. The surprising lack of judgment displayed by the patient in regard to the morbid contents of his consciousness rarely occurs in ordinary life. Still he appears perfectly competent in his work. He judges his fellow patients in great part falsely, for he recognizes only the disturbed and excited to be insane. That such a person cannot live in society, cannot care for himself and be self-supporting, needs no proof, he is forever assigned to institutional care.

This patient is in a measure merely the paradigm of all cases of extensive residuary falsification of consciousness. The extent of the derangement prevents the construction of a delusional system. But the relatively complete recovery from the disease process renders possible an approximately normal intellectual action within the circles of interest of his occupation and so an active life.

X.

PRESENTATION OF CASES (Continued).

The patient, I present you to-day, is a typical example of chronic *allopsychical falsification of consciousness*. Mrs. Reisewitz, 45 years old, is the widow of an agent, whose disease has gradually developed for five years from just appreciable beginnings and will probably progress still farther. On entrance she attracts your attention by her formal and rather dignified manner, and her facial expression is one of solemnity. On being questioned she stated she has been in Dalldorf, was brought here from there and those about her there must have come to Breslau. She does not recognize this to be a hospital, it is a "holy place," "God's house," everything has a churchly solemnity. The purpose of her stay here is the preparation for an important position later, for now she is very unworthy, and it is a great honor for her to be received here. Perhaps she owes it to a higher priesthood, to whom she has appealed in her troubles. It is generally known that she has had much trouble and misfortune, her name is familiar to

everyone in Breslau. Except this remark indicative of exalted self-confidence, she preserves a submissive nature, rises and bows whenever spoken to and does this to all her fellow patients, even the totally demented paretics. She often apologizes for having behaved improperly and implores that her words be not too strictly weighed. She considers all her fellow patients men in disguise, mostly priests of high position, who are here partly for penance. The physician [also belongs to the priesthood, if he may have been a physician formerly. She calls a 13 year old girl the Duke of Arco, the head nurse Emperor Frederick, the other nurses certain princes. All these persons have been with her in Dalldorf, if they are now changed in appearance. She alone has not changed.

You see, that the facts, we have gotten, permit us to conclude the existence of a so-called systematized delusion, which is essentially of a religious nature, and has developed an autopsychical falsification of consciousness, for the patient, after undergoing a period of temptation, will have to play the role of a saint or prophetess. But especially striking seems the interpretation of the persons and general surroundings in a sense corresponding to this religious delusion. With her apparent self-possession, quiet behavior, perfectly normal general feeling, we will not be able to assume, that her senses delude her and therefore incapable of correctly observing the things and events of the world; nevertheless she explains everything in the sense of certain prevailing ideas and so often of a religious nature. She then affords us an excellent example of disordered secondary identification, owing to the contents of consciousness being changed by a chronic mental disease. I will refer later to the anamnesis, so characteristic of cases of this kind. With respect to the present state it is to be remarked, that the patient is not entirely free from hallucinations. Those of hearing appear now and then, while those of smell and subjective cutaneous sensations are quite frequent. The first are interpreted as blessings, perhaps the voice of God, those of the other senses, "the inhalation" of chloroform

and the "electrical treatment" leave a debilitated feeling and are usually patiently submitted to as tests, but yet occasionally cause fits of anger with violent cursing. A longer examination would be tiresome, nevertheless correct data are obtained as to the personal facts of the patient until the beginning of her illness, hence memory defects do not exist, attention and ability to attend are approximately normal.

Another patient, in whom the consciousness of the world has been perfectly retained through the whole course of the disease to the present moment, while the consciousness of the body, but especially of the personality, shows marked changes, you will perceive to be the opposite of the former case with such pronounced allopsychical falsification of consciousness. We may consider it an example of a residuary *somatopsychical falsification of consciousness*. Tscheike, a cook, 45 years old, was treated for four months at the Clinic five years ago, and transferred from here to the Berlin insane asylum. Discharged from there relatively improved, she has, after many futile efforts to resume her trade, finally come back to our Clinic. The period of her first stay may be regarded as the acute stage of mental disturbance, which had developed very gradually for two years and was accompanied by various severe derangements of the general condition. She is now entirely free from such troubles, looks well, bodily functions are regular, her weight is maintained and her conduct to-day shows nothing out of the ordinary. Her answers are prompt and rational. She is perfectly oriented as to her surroundings, her present position and her former illness, as well as to all her personal relations, and has a specially good memory for certain details of her illness. Her attainments are in accord with her station in life and degree of education, her disposition, in spite of a certain feeling of illness, is more exalted than depressed. On the ward she does not always behave properly, is only occasionally to be induced to go to the sewing room, and usually prefers to meddle in various affairs that do not concern her, to give advice, annoy

her fellow patients by jests and childish pranks. For instance she jerks off the bed covers, unexpectedly pours water in their faces or steals food from them or the kitchen. The physician's visits are generally disturbed by her interruptions. She disobeys the medical orders and when put to bed for discipline, she does not hesitate to come on the hall undressed. You see, that the patient's conduct is far from normal, but requires so much consideration, and patience from those about, that she can only live under the special conditions of an asylum. You will see subsequently that many patients are in the same position, and essentially in consequence of a certain quarrelsome ness are incapable of living otherwise than in systematic asylum relations, owing to an assuming, largely egotistical conduct requiring constant attention after the mental disease. But on closer inspection our patient is found to entertain a large number of false ideas. At the time of her illness she had a bronchial catarrh. She was then so filled with mucus, that it has produced in her body a primitive man, lamprey or an amphioxus—she uses these three term synonymously. The primitive man has troubled her greatly, has inhabited her body like a living child. It had primarily originated in the diaphragm, has a transparent, pinkish body, of mucus—as she might have seen it in the aquarium—has a cherub's head and a pointed tail. It is so situated within her, that its head is in her brain, the body along her spinal column, the tail over her anus. It has often tried to force its way out, as she has noticed from the pricking in the top of her head and at her anus. It lives on what she eats, but principally on what she drinks, hence she must drink so much. Since then everything has been double in her, double nerves, double pulse, double brain. From that time she has also had a very young face, like that of a fifteen year old girl with a cherub's head, and her pitted skin has become smooth. (Patient actually has numerous pock-marks on her face.) During her illness she once vomited the right half of her brain, intense headache and nausea having preceded, the vomit looked like yeast, so she felt that the right half

of her brain was damaged. Later the affected hemisphere has been restored. From the illness she has also obtained a double mind, "in one part all that concerns her work, in the other politics and science." In fact the patient seems to definitely differentiate her early mental possession, which comprise essentially her interests as a cook, from her thoughts since the beginning of her disease. She believes she has a "knack for everything" and has apparently read a number of books, in which she could take an interest, but did not understand. She speaks of Haeckel's "Primitive Man or Amphioxus," but believes that Haeckel implies that they are the same. According to her idea a person has twenty-seven senses: "thoughtfulness, combativeness, hygiene, language, literal sense, color sense, art sense," the others do not occur to her. She writes essays on political topics, and I will read you the beginning of one: "the lowest class of persons is utilized to save life of the higher. Consequently poor individuals contract acute or the opposite. This stomach trouble is combined with chlorosis", etc. She claims especially to know something of medicine, to be able to treat fractures, apply dressings, cure diphtheria, etc. Hence her annoying interference during the physician's visits. As to the origin of these falsifications of consciousness, in part somatopsychical, in part autopsychical, we will study fully later. Here I will merely say, that in this patient we have observed the period of origin of the somatopsychical delusions and therefore can prove them due to abnormal bodily sensations. If such a fanciful idea could arise from her own body, we must realize the peculiar position in which such a patient is placed. These patients are wholly unable to express the morbid feelings, heretofore entirely unknown to them, completely devoid of analogy with the normal sensations of the body. According to the individuality similes, similarities, analogues are then obtruded on the consciousness to aid in their description. At the time of the acute affects only too often do such patients complain how indescribable, unspeakable, unparalleled in their kind are the feelings they suffer. The more or less

distinct localization then affords the chief basis for the construction of an explanatory delusion, whose several components are taken from the individual's physical knowledge. Our patient has apparently been crudely influenced by Haeckel's writings, when formulating her delusional system. A further explanatory delusion is the basis of the autopsy-chical delusion, that by the disease she has come into possession of new intellectual power relating to politics and science. The self-perception of a changed trend of thought, due to a fundamental alteration of the contents of consciousness, expresses a point, which I will discuss more fully later. The absurdity, apparent mental enfeeblement in this intellectual process accompanied by exalted disposition is fully explained by the inconsistency with her previous course of education.

An even better picture of residuary somatopsychical falsification of consciousness you will call to mind from the previous semester. I then presented to you a woman, 65 years old, of whose past we could ascertain nothing definite. According to her statement she was seriously ill 18 years ago, when her whole body, but especially its external contour, had been deformed. She complains of her frightfully ugly face, her clumsy and awkward extremities, the altered complexion, her imbecilic expression, etc., while in reality she was a graceful old lady of good form and relatively intelligent appearance. Abnormal sensations did not exist, and there were no disorders of the general condition. Nevertheless on careful examination other marked changes, which might be called defects, could be proven, and such defects were especially prevalent in the allopsychical spheres. Besides with relatively good attention, the ability to attend was appreciably blunted, so that we concluded the residuary falsification of consciousness was complicated by senile mental derangement. The first seeming clearness of the case thus proves to be deceptive.

Clearer by far is the clinical picture of a residuary somatopsychical falsification of consciousness in the other case presented at that time. It was, as you remember,

the case of a young man, Biega, 20 years old, who claims to have been deformed by his disease, so that he is hunch-backed, the upper ribs sunken, the lower ones awkwardly prominent, the shoulders appreciable lowered. Nothing was to be observed objectively of all these changes, they no longer caused the patient any trouble, but he well remembered the time when this change had appeared with pain and indescribable sensations, a period, which lasted for years. Had it been possible to get the patient to talk, it could have been demonstrated that he had no defects, and by a special test it was possible to show that attention and ability to attend were normal. But yet at the first glance the patient's whole bearing and external appearance gives the impression of profound mental derangement, his bent posture, his reticent answers, his gloomy expression, cold extremities and cachetic complexion attract our attention. Besides we learn, that he is wholly inactive, avoids his fellow patients, eats insufficiently and is very negligent of his personal appearance. The suspicion, that the patient suffers from bodily sensations is confirmed by an examination, for it reveals that he thinks he feels an obstruction and occlusion of his intestinal canal near the anus, complains of the severest pains and various abnormal sensations in defecation and, if with the reservation of hopelessness, besought medical aid for his peculiar trouble.

Mrs. Schmidt, 57 years old, the widow of a mason, whom I next present, appears perfectly well, physically, complains of no derangements of her general condition and very quietly and self-possessed tells of her troubles. The cause of her compulsory conviction was the annoyances to which she had been subjected at home, and to which she had replied by threatening her relatives and other inmates of the house, she had been squirted at and sprinkled, and been shot at from all sides. Yet we will let her tell her own story. "I felt that it was squirted on my skin in a fine spray from a syringe, generally the skin of my face got it. It happened when I stood at the window, that I heard a signal, and then I got a squirt, often in the eyes,

. so that I could not see. At first the bone was also injured, it became red and inflamed, and I also heard the shot fall, which have wounded me in the arm, breast and other parts of the body. Something has struck the skin of my feet, particularly the heels, so that I could not walk for eight days. Occasionally I get strong injections when I go to bed, which stupefy me. At any rate the walls were hollow and passages have been made, from which I have been squirted. I do not know who persecutes me so, I consider it a chastisement, but do not know who has the right to punish me so."

She then tells, that the medical visits, which had preceded her conviction, had not been properly made. A woman dressed in the clothes of Dr. H., whom she knows, had been sent to see her. But she had recognized by the beautiful teeth that it was not a man but a woman. Here in the asylum the persecutions have in great part ceased. Still we learn from the clinical history that she has complained of having been annoyed about her genitals during the night and of having seen a shadow. On the ward she has complained of other bodily abuses. At home her teeth had been forcibly broken off and her lips glued together and tightly closed by a viscid substance. Burning pains in the face, of which she often complains, she explains by the fact that some corrosive substance has been sprinkled over her. With regard to the development of the disease, we have learned from her son-in-law, that for five years she has believed herself persecuted in this way and for some years before had been solitary and mistrustful and no longer went out. She had periodically complained of voices, which came from the wall, without expressing herself more fully. Owing to distrust she finally discharged the servant girl and did the housework herself. She had not owned one of her grandchildren, but claimed it might have been substituted. She had finally threatened to break all the windows in the house.

The patient is evidently afflicted with a delusion of persecution of chronic development, and we have to regard

a number of morbid sensations and tactile hallucinations as its basis. This patient also notices changes in her body; but contrary to the previous patients, she ascribes these to external agencies and so, besides the somatopsychical, there is an autopsychical falsification of consciousness. We will find the same delusion of persecution in the following case, yet of entirely different origin.

Mrs. Reising, 50 years old, the vigorous and apparently well nourished widow of a mason, complains that she has been enticed away from home and brought here by a policeman. This commitment to an insane asylum, counter to her wishes, is evidently an act of revenge on the part of Mrs. W., who is acquainted with the Police Commissioner of the district and is intimate with him. Thus it would have been possible for her to use the police for the furtherance of her plans. She has known this Mrs. W., a midwife, for six years. As she, the patient, is childless and having seen that Mrs. W. treated her daughter badly—"the urchin was in the mother's way," she interjected—she had taken the child to bring up. Two years later the child had been taken from her for no reason. In the meantime the patient had learned that Mrs. W. led an immoral life and is a vicious and quarrelsome person. She has noticed soon after the child was taken away, that she must have been slandered in certain saloons, among other things she has been charged with sexual intercourse with the husband of Mrs. W., she has been insulted and annoyed on every occasion, it has been said to her face on the street that she is a whore, etc. Only Mrs. W. could be to blame for it all, for she is capable of it. She has finally made a complaint of "vicious persecution for a year and intentional abduction of the child," but does not know what has become of it. Finally, to be let alone, she moved to the small city K., but has noticed that she is insulted by the people. Evidently W. has written and incited the people against her. She then came back to Breslau and found it worse than before. She has even heard the words whore, prostitute and the like from little school children, and doubtless the midwife, W.,

is to blame for it all. Three weeks before she went to the Recorder about her troubles with W., when, as she correctly describes, an official physician visited her on the Recorder's order. She, the patient, still construes the affair very differently; she believes that the Police Commissioner has illicit intercourse with this Mrs. W., who has induced him to send her, a perfectly sane person, to the insane asylum.

You see, that the woman knows how to give her delusion system a certain appearance of probability. She speaks correctly and in accord with her degree of education and has an intelligent and forcible expression. She has been in the asylum three months. At first she was very urgent for a discharge, became readily excited on refusal and often said things, which indicated a continuance of hallucinations of hearing. She has gradually become more affable and friendly, and the hallucinations of hearing seem to have ceased. Besides she knows nothing of "voices", for she has apparently projected her hallucinations to persons about.

She explains her detention in the asylum by the fact that the physicians must act according to the instructions of the police. We have heard of no bodily complaints except an occasional gastralgia. She lost seven pounds in weight during the first two months, but has gained somewhat since then.

Mrs. Reising is a typical example of a form of chronic progressive falsification of consciousness quite frequently met with. Hallucinations of hearing of annoying and threatening purport seem to afford the chief foundation, so that we are justified for the present in maintaining a special form of allopsychical falsification of consciousness. We will later get a better comprehension of the case.

(*To be continued.*)

DEGENERACY STIGMATA AS BASIS OF MORBID SUSPICION.

*A STUDY OF BYRON AND SIR WALTER SCOTT.**

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THE lameness of Sir Walter Scott should seemingly, from its extent, have left as deep an impression upon him mentally as Byron's club foot did upon him. To judge from a description by Mrs. Ballantyne, of his appearance at the height of his fame: When he stood on his sound or left limb he rose to the height of a Hercules, and when on the lame one that he dwindled into a dwarf. Except for this infirmity his person would have been entirely handsome. He was at the time about thirty-four, rather fair, but without color in his cheek, light brown hair, combed straight on the forehead, the eyebrows still lighter and hanging much over the eyes which were greyish, small and sharp; the nose not so prominent as in Chantrey's bust, the upper lip remarkably long and curved outwards, the corners of the eyelids, as well as the corners of the mouth inclining downwards, his teeth small and regular but ill-colored, which appeared to be the result of inattention, the more remarkable as in all other respects he was scrupulously nice in his toilets. His hands were delicate, and at the time he always wore an antique gold ring on

*Continued from April ALIENIST AND NEUROLOGIST.

the little finger of the left hand. The sound limb save
that the foot was too large was always eminently hand-
some. The shoe of the lame foot was always too long.
He walked very rapidly, took gigantic strides, set the staff
so close to the lame foot as often to put it actually upon
it and she was in constant apprehension that he would fall
and injure himself. In manner he was a perfect gentle-
man.

The tendency of the Rutherfords, (the ancestors of Sir Walter Scott's mother) to haemorrhage indicates that hereditary defect had evinced itself in that bad tubing for the pipes of which Osler speaks. While undoubtedly tendencies in the arterial direction during evolutionary periods of stress are results of acquired condition like the essential fevers, lues, gout, scurvy etc., or of involutions from age still behind these often exists a slight hereditary or congenital defect. Where an atheromatous tendency is a decided expression of hereditary defect, its results will be apparent during the first dentition and other periods of evolutionary stress. The circumstances of Scott's first attack of paralysis after a "teething fever," of the haemorrhage during puberty and of certain vertiginous conditions between 30 and 45 are best explained by this early atheromatous tendency. The continuity of the involution attacks is well shown by Nisbet. At the age of fifty Scott writing to a friend with reference to the work on which he was then engaged says "Peveril will I fear 'smell of the apoplexy.'" This letter, adds Lockhart, contains the first allusion to the species of malady that ultimately proved fatal to Sir Walter Scott. He as far as Lockhart knew never mentioned to any one of his family the symptoms he here speaks of. But long before any serious apoplectiform seizure occurred it had been suspected by Lockhart and by others of his friends that he had sustained slight attacks of that nature and concealed them. Three years later (in his journal) Scott speaks of feeling a tremor of the head, the pulsation of which becomes painfully sensible, a disposition to causeless alarm, much lassitude and decayed vigor and activity of intellect. An odd optical illusion also occurred to him. "I

have of late" he writes "been accustomed for the first time to the use of spectacles. Now when I have laid them aside to step into a room dimly lighted out of the strong light which I use for writing I have seen or seemed to see the rim of the same spectacles which I have left behind me. At first the impression was so lively that I put my hands to my eyes believing that I had the actual spectacles on at that moment; but what I saw alarming." Another illusion occurred to Scott on hearing of Byron's death. He thought for a moment that he saw the image of his deceased friend but on examination it proved to be nothing but the folds of some drapery. It was while Scott was writing the "Tales of a Grandfather," at fifty-eight that the first alarming stroke of paralysis occurred. It rendered him speechless for ten minutes and thenceforward his letters continued to drop hints as to the imminence of a recurrence of apoplexy. His gloomy anticipations were soon realized. Repeated attacks weakened him to such an extent that he sank into a state of torpor, and apoplexy caused his death at sixty-one.

These attacks seem to be related to those which produced the effect of the teething fever. Scott presented a decided contrast in the apparent mental effect of his lameness not only to Byron but equally to another lame poet Akenside. As Jeafferson remarks: there were two Akensides, Akenside the poet and Akenside the man; and of the man Akenside there were numerous subdivisions. Remarkable as a poet he was even yet more noteworthy as private individual in his extreme inconsistency. No character is more commonplace than the one to which is ordinarily applied the word contradictory; but Akenside was a curiosity from the extravagance in which this form of "the commonplace" exhibited itself in his disposition and manners.

By turns he was placid, irritable, simple, affected, gracious, haughty, magnanimous, mean, benevolent, harsh and sometimes even brutal. At times he was marked by a childlike docility and at other times his vanity and arrogance displayed him almost a madman. Of plebeian extraction, he was ashamed of his origin and yet was throughout life the

omit

champion of popular interests. Of his real humanity there can be no doubt yet in his demeanor to the unfortunate creatures whom in his capacity as hospital physician he had to attend, he was always supercilious and often cruel.

He was lame, one of his legs being shorter than the other; and to this personal disfigurement he was even more sensitive than was the author of "Childe Harold" to his deformity. When his eyes fell on it he would blush, for it reminded him of the ignoble condition in which he was born. His father was a butcher at Newcastle-upon Tyne and one of his cleavers falling from the shop-block had irremediably injured the poet's foot when still a small child. Akenside from an early period in his life was destined to be a dissenting clergyman. In his nineteenth year he was sent to Edinburgh to prosecute his theological studies. The expenses of his educational course were in part defrayed by the Dissenter's Society. But he speedily discovered that he had made a wrong start and persuaded his father to refund the money the society had advanced and to bear himself the cost of educating him as a physician. The honest tradesman was a liberal affectionate parent. Mark remained three years at Edinburgh a member of the Medical Society and an industrious student. He then proceeded to Leyden Holland where he remained for the same length of time and took his degree of Doctor of Medicine May 16, 1874. At Leyden he became warmly attached to a fellow student named Dyson. The two friends though very unlike each other in their principal characteristics, played the part of Pylades and Orestes. Akenside was poor, ardent and of nervous poetic temperament. Dyson was rich, sober and matter-of-fact, a prudent placeholder. He rose to be Clerk of the House of Commons and a Lord of the Treasury; but the atmosphere of political circles and the excitement of public life never caused his heart to forget its early attachment. Whilst the poet lived Dyson was his munificent patron; when death had stepped in between them, his literary executor. He allowed him for years no less a sum than \$1500. per annum.

Akenside was never very successful as a physician although he thoroughly understood his profession and in some important particulars advanced its science. Dyson introduced him into good society and recommended him to all his friends. The greatest income Akenside ever made was less than what he obtained from his friend's generosity. He managed to keep a carriage and pair; though \$1500. a century ago went nearly twice as far as it would now, he could not on that have supported the equipage. His want of patients can easily be understood. He was, as Jefferson remarks, a vain, tempestuous, crotchety little man little qualified to override the prejudice which vulgar and ignorant people cherish against lawyers and physicians who have capacity and energy enough to distinguish themselves in any way out of the beaten track of their professional duties.

He was admitted by mandamus to a doctor's degree at Cambridge. He became a Fellow of the Royal Society and a Fellow of the Royal College of Physicians. He tried his fate at Northampton and found he was not needed there. He became an inhabitant of Hempstead but failed to ingratiate himself with the the opulent gentry who then resided there. He located at the age of 27 in Bloomsbury Square where he resided till death.

He was not liked at St. Thomas' Hospital. The gentle Lettsom (whose mild poetic nature had surrounded the author of "The Pleasures of Imagination" with a halo of romantic interest) when he became a student of that school was shocked at finding the idol of his admiration so irritable and unkindly. Akenside according to Lettsom was then, thin and pale and of strumous countenance. The injured leg was lengthened by a false heel. In dress he was scrupulously neat and delicate, always having on his head a well powdered white wig and by his side a long sword. Any seeming want of respect threw him into a fit of anger. A student who accompanied him on a certain occasion round the wards spat on the floor behind the physician. Akenside turned sharply on his heel and demanded who it was that dared to spit in his face. To a poor woman who

applied to him for medical advice he exhibited his dislike in the most offensive way and cruel manner. The students who watched him closely and knew the severe disappointment his affections had suffered in early life, whispered to the novice that the poet-physician's moroseness to his female patients was a consequence of his having felt the goads of despised love. His fastidiousness at so close a contact with the vulgar rabble induced him sometimes to make the stronger patients preceed him with brooms and clear a passage for him through the crowd of patients.

On one occasion Akenside ordered an unfortunate male patient to take boluses of bark. The poor fellow complained that he could not swallow them. Akenside was so incensed at the man's presuming to have an opinion on the subject that he ordered him to be turned out of the hospital saying "He shall not die under my care." A man who could treat his poor patients in this way did not deserve to have any rich ones. These excesses of folly and brutality however ere long reached the ears of one of the governors who gave the doctor a good scolding roundly telling him, "Know thou art a servant of this charity."

Akenside had seemingly excuses for his irritability. He was very ambitious but he failed to achieve that success which the possession of great powers warranted him in regarding as his due. Like Garth no physician understood his art more or his trade less. He had a thirst for praise and worldly success and a temperament that caused him (notwithstanding all his sarcasms against love) to estimate at its full worth married life; yet he remained all his days poor and died a bachelor. Other griefs also contributed to sour his temper. His lot was cast in times that could not justly appreciate his literary excellence.

His sincere admiration of classic art, literature and manners was regarded by the coarse herd of rich stupid Londoners as so perfectly ridiculous that when Smollett had the bad taste to caricature him in "Peregrine Pickle," as the physician who gives a dinner after the manner of the ancients, the applause was general. Every tradesman who had scholarship enough to read the novel had a laugh at the

expense of a man who has claims to be regarded as the greatest literary genius of his time. The polished refined circles of English life paid homage to his genius but he failed to meet with the cordial recognition he deserved. Samuel Johnson though he placed him above Gray and Mason did not do him justice. Boswell didn't see much in him. Horace Walpole differed from the friend who asked him to admire "Pleasures of Imagination." The poets and wits of his own time had a high respect for his critical opinion and admitted the excellence of his poetry, but almost invariably with some qualification. He died of diptheria in his forty-ninth year June 23, 1770.

Akenside's poetical career was one of unfulfilled promise. At the age of twenty-three he had written "The Pleasures of the Imagination." Pope was so struck with the merits of the poem that when Dodsley consulted him about the price set on it by the author (\$600) he told him to make no niggardly offer since it was the work of no every-day writer. But Akenside never produced another great work. Impressed with the imperfection of his achievement he occupied himself with incessantly retouching it till he came to the unwise determination of rewriting it. He did not live to accomplish this suicidal task but the portion of it which came to the public was inferior to the original poem, both in power and art.

In Akenside, the lymphatism called hereditary struma, which is an expression of hereditary defect played a large part in determining irritability, suspicion and brusquerie.

(*To be Continued.*)

SENILE DEMENTIA AND MARRIAGE.

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THE question of senility like so many other questions in science is a purely relative one. One man may be senile at sixty while another may reach ninety without apparent mental or physical change, in the direction of senility. Senile dementia usually begins with a marked loss of memory respecting very recent events while events of the remote past being remembered with great minuteness are predominant and impress the ordinary observer with the belief that the patient has an unusually good memory. There is usually at this time great irritability in temper and impatience of contradiction also. If the change proceed no further the patient cannot be regarded as insane albeit he is very likely to be affected by undue influence. Practically his mental condition is that characterized in the statutes of some states as marking the "spendthrift." If the senile change proceed the motor and emotional faculties are affected. The patients show an undue tendency to wander about and go gadding. They are often unduly exalted in ideas, given to talkativeness and stupid jokes. As would naturally happen under conditions of emotional exaltion, they are liable to be very erotic. From this results the marriage of old men and women to improper persons. Criminal and sexual pervert assaults likewise occur from this cause, especially on young children. From the motor exaltation results a wandering tendency which may vary from a simple desire to travel to a senseless wandering, where-

by the senile lunatic is so often lost. An old man may get up at midnight to search for people who have died in his boyhood.* Senility may occur in the physical direction without marked or decided mental change albeit this is always imminent.

Any form of insanity may of course occur in old age. As C. H. Hughes† has shown acute dementia or confusional insanity may occur; a fact of great medico-legal importance in connection with wills, marriages and contracts. Acute mania, melancholia and stuporous insanity may also appear in old age and have like medico-legal bearing. As these psychoses are apt to occur in comparatively healthy persons, the ordinary physical changes of senility are of value in diagnosis. In the case reported by Hughes, the pupils were normal, there was no arcus senilis nor was there any evidence of atheromatous change in the heart, temporal or other arteries. There was no evidence of apoplectiform attacks. In differentiating senile dementia from acute psychoses occurring in old age these factors should be taken into consideration. The differential diagnosis is of most importance in medico-legal cases hence the difference between chronic psychoses occurring in old age and senile dementia need not be considered; especially as the chronic psychoses have a tendency to precipitate the onset of senile dementia and thereby become complicated by it. One of the most important forensic relations of senile dementia is that in connection with contracts. According to the "American and English Cyclopædia of Law"‡ the rule is that a "person who is so insane as to be incapable of entering into a valid contract concerning cannot enter into a valid marriage. Mere weakness of understanding will not invalidate a marriage nor will insanity which does not affect the subject matter of the contract. The authorities are in conflict as to whether the marriage is void ab initio so that it may be impeached collaterally.

The New Jersey chancellor has held in a suit by a husband (through his guardian) to annul a marriage on the

*Detroit Lancet, Vol. VII.

†Allenist and Neurologist, 1882.

‡Witthaus-Becker Medical Jurisprudence Vol. III.

ground of mental capacity that, since until thirty-five years of age the husband was permitted to take care of himself and control his property, that he had a good memory and shrewdness in business and seemed to have a proper conception of the marriage ceremony and the responsibilities of marriage relationships, the evidence did not justify annulment of the marriage. In these decisions however, the courts have, from the vicious bias as to omniscience in fact which so besets Judges, attempted to force all types of insanity into the Procrustean bed of their preconceived scientifically untrained notions of psychiatry. In senile dementia the nature of the psychosis covers nearly all the points requiring consideration in legal questions concerned in contracts. The only issue to be determined is whether senile dementia exists. Nearly all the forensic bearings of this mental state on the question of marriage were singularly well illustrated in a case recently decided by Judge Tuley of the Circuit Court Cook County, (Chicago.) The evidence herein used is that cited by Judge Tuley. The alleged "wife" entered suit to obtain separate maintenance and to set aside certain trust deeds. The woman prior to 1871 (according to evidence cited by Judge Tuley in his decision) had given birth to an illegitimate child about whose parentage she was not certain, she subsequently married a man twenty-five years her senior who died several years ago. She had also been repeatedly guilty of lewd practices sometimes for mercenary reasons. An uncle in Chicago whom she frequently visited knew of her immoral practices and that she had an illegitimate child. This uncle was very well acquainted for a dozen years with the "groom" in the marriage at issue before Judge Tuley. As the Judge remarks, there is evidence to show that this uncle obtained considerable influence over the "groom" by reason of this intimate friendship.*

The defendant in the case, the "groom," who had resided in Chicago for nearly half a century, had accumulated a large fortune as a foundryman. He had married a Scottish woman of refinement before leaving Scotland for

*Decision Aug. 1, 1899. *Pyott vs Pyott.*

America. They had eight children of whom three died. Two of the others married well and settled near the parental home. After forty years of active business life this Scotchman began to break down mentally and physically. He was getting old but that alone would not account for the rapid mental decline in a normal manner. He who had been alert in business now began to manifest an unaccountable indifference to his interests in his foundry. A year or two before his first wife's death (Oct. 27, 1897) he had ceased to attend to any business and when his partner died he refused to interest himself further in business matters. Up to this time he had been most careful of personal attire and appearance. He became slovenly and went about his home in presence of casual visitors, barefoot and insufficiently clad. His wife (attributing his distressing condition partly to disease and partly to advancing years) told his visitors not to mind his strange conduct and appearance as he was getting very childish. For years he had been a great reader of scientific books and periodicals although he had received but a slight village school education, he had become a cultured man and spent much of his time with books. Latterly he confined his reading to the coarsest kind of erotic novels and to the newspapers. He refused to continue subscriptions for scientific periodicals which he had taken for years. While previous to this change he had the most scrupulous regard for propriety, he frequently appeared in a state of semi-nudity. For thirty-five years he had been an assiduous attendant of his church and a liberal contributor to its support. This habit suddenly changed without obvious cause. He ceased saying grace at table, a departure from a habit of forty years duration. He had been an ideally considerate and tender husband yet the year preceding his wife's death (when her health was so uncertain that had he been as formerly, her condition would have filled him with the deepest concern) he was so indifferent that, despite the protestations of his family, he suddenly decided on a trip around the world; which most probably would leave him far distant when death came to his wife. He had traveled extensively at home and abroad

during his mental strength arranging all details of the trip and supervising all expenditures. On this last trip however a son was directed by the family to accompany him. The son paid bills and was obliged to care for his father as if he had been a child. The latter exhibited unusual vulgarity, in language and manners. The father in the aisle of a railway coach narrated a vulgar anecdote to a newly married couple which he would not have told even to men in the days of his mental vigor. He told porters and cooks about his business and domestic affairs. In European cities he frequently arose at night to wander aimlessly about hotel corridors in his night garments. He bought lavishly of trash during this European trip which had to be thrown away on his return. After his return his conduct was so strange that the family were obliged to apologize for it to visitors and friends. In obedience to his wife's wish he started his sons in the foundry business. He went to the foundry of an old friend to buy materials. He had not however talked five minutes when the friend discovered that the old gentleman was ready to buy anything and everything offered at any price. The friend therefore had him send for the sons before he would transact business. During his wife's last illness he was indifferent and unconcerned. His conduct became such that the trained nurse bolted the door to keep him out. She was of the opinion from his actions that he was insane. When his wife died he sent for a fiddler to play merry tunes. As he had never carried on the "wake" custom of the lower classes of Scotch and Irish at previous funerals in his family, this could not be considered an attempt at a wake. In dealing with the expenses of his wife's funeral he showed himself silly, penurious and parsimonious. The proposal to have a conservator appointed was naturally objected to on account of the disgraceful publicity which the senseless laws of Illinois regarding insanity would entail. After the death of his wife he did no business whatever. One son ran the old firm while others ran the new foundry. The household affairs were attended to by another son. At his country home the servants were told to humor him in every way possible un-

less his directions were harmful to himself. On any summer day this employee could have been seen transplanting trees and flowers from place to place; and moving them back to the old place again to suit the caprice of the old gentleman. With all this capriciousness, there was much emotional exaltation and an attempt at silly jokes. All one afternoon he sat in the carriage impatient to start on a home journey to Chicago, missing his supper and at last during a threatening storm he set out for Chicago. He insisted against the coachman's protest in wearing his rubber coat next to his body and his woolen coat over that. When he and his seven-year-old grandchild visited a friend, the grandchild was given cookies whereupon he petulantly called for cookies too. When she was given picture books he insisted on having picture books too. While his daughter was having a dress made for his wife's funeral he insisted that he should have the same kind of a dress. He was found to have changed his clothing before visitors and to have attended to the calls of nature before ladies. He not unfrequently became lost while near his house. He had several apoplectiform attacks followed by temporary aphasia. He frequently would walk up and down, laughing and saying to himself "Her golden hair was hanging down her back," apropos of nothing. He made furious love three weeks before his second "marriage" to a Scandinavian girl who had been a servant several years in his family. His unexpected demonstrations and his proposal to marry her frightened the girl who pronounced him crazy and informed the family of his proposition.

The question of a conservator was raised once more in consequence of this proposal, but publicity was still feared. The attempt was then made to guard the patient's estate by trust deeds.

About this time the patient became troubled about a supposed alienation from his sons and proposed to get a housekeeper who could keep his sons at home. He applied to the uncle of the second "wife" for this specific purpose and repeated his wishes that he could get a housekeeper so that his boys would be kept home at night. He does not

appear to have had any other idea of his marriage with the complainant. A short time after the marriage and before he left the complainant, talking to a young lady friend he expressed very strongly the idea that he had gotten a housekeeper and not a wife. He said to her; "Won't you get married and come to my house and live?" "Why no," she replied, "I will give you any part of the house you like" he returned, "I have got a housekeeper now that will do the work and I will get another girl and you can have a wash woman and any part of the house you like. I will buy all the furniture you want and you can fix the house up from top to bottom if you will only come there and live." The young lady replied "your wife wouldn't have me." "My wife," he returned "I haven't any, but you fellows don't understand that this woman married me only to be my housekeeper." The "bride's" friends did not invite any of the members of the "husband's" family to the marriage albeit they might easily have been summoned by telephone. About a month after marriage the defendant left the complainant on the ground of her bad character. There is evidence to show that he entertained feeble delusions of her desire to poison him. According to one witness, while they were living together in Indiana he inquired of her before eating food which she had prepared: "Is this all right, is there no poison in this?" The marriage was conducted with great disregard of consequence and appearance. A cousin of the "bride" lent money to pay the minister. The groom was very slovenly and carelessly dressed. The couple lived for awhile in Indiana several miles distant from the residence of the old man's children. After her abandonment by the "groom" the "bride" brought suit for separate maintenance and to set aside the trust deeds. Judge Tuley in his opinion remarks: One of the chief grounds on which it is contended that a decree of nullity as to the marriage should be entered, is the insanity and consequent incapacity of the groom to enter into the marriage contract. The Illinois statutes provide that no insane person or idiot shall be capable of contracting marriage; and the words insane person and lunatic

shall include every idiot, non-compos, insane or distracted person. As was said by the Illinois Supreme Court in the noted case of *Orchardson vs Colfield*:* These provisions are but declaratory of the common law and a simple marriage ceremony will not make a couple man and wife; capacity and consent are absolutely essential but a celebration only contingently so. It was held in the Owings case† that: 'It has been long established that a contract made by a person who is at the actually non compos mentis, either in idiocy, delirium, lunacy or dotage, is entirely void: Indeed it would be difficult to conceive how such a contract should ever been otherwise considered than as an absolute nullity.' The court in that case gives, according to Judge Tuley, the best definition of dotage: "Dotage is that feebleness of the mental faculties which proceeds from old age. It is a diminution or decay of that intellectual power which was once possessed. It is the slow approach of death; of that irrevocable cessation, without hurt or disease, of all the functions which once belonged to the living animal. The external functions gradually cease, the senses waste away by degrees and the mind is imperceptively visited by decay. The inert and dull sense transmit passing occurrences so imperfectly to the sensorium that they leave no or but a very transitory impressions there. Hence long past transactions are often remembered with much more exactness than those which have taken place recently. In the second childhood as in the first, all the present makes but a faint and fleeting impression on the mind. Hence the judgment in both stages is weak and the conduct unsteady and frivolous. But a man in his dotage is evidently distinguishable from an idiot who has no mind at all or a lunatic whose mind is in ruins, broken up and the component parts of which are at variance with each other. The old man has a mind worn and in a state of decay it is true, but still so much of it as remains, is feebly governed upon principles of its former sound condition. Its conceptions are not impertinently mixed nor is it grossly misguided in

*171 Illinois Supreme Court Reports page 14.

†1 Bland's Chancery page 389, and 390.

any of the feeble operations of which it is capable. Perhaps the most striking peculiarity of dotage is in its imbecility of perception. The senses not supplying the mind as usual with matter for exertion it decays for want of use and becomes incapable of receiving any additional ideas or of following through any unusually concatenated or long combination of thought. Hence the infant and the dotard, from imbecility of bodily functions, present that remarkable similarity in the feebleness of their minds and easily surrender themselves to the direction of those about them for whom they have a regard or who may choose to exercise any authority or influence over them. Physicians, it appears, do not* regard this species of mental imbecility as being in itself a disorder or the effect of disease, but the law considers it not only as a species of insanity from which there is no hope of recovery but as one which always becomes worse as age advances."

Just what degree of mental defect is sufficient to invalidate a marriage is, Judge Tuley remarks, a question as to which the authorities are somewhat at variance. The rule generally laid down is that the party must be able to understand the nature of marriage and its consequences. This makes the test whether there is sufficient mental capacity to give intelligent consent. If the incapacity be such that the party be incapable of understanding the nature of the contract itself and incapable from mental imbecility to take care of his personal property, such person cannot dispose of his own person by a marriage contract any more than by any other contract.

"The evidence adduced," Judge Tuley remarks, "to show senile dementia on the part of the "groom" is "first that of physicians known as experts in mental diseases and eminent in their specialty. These experts are Drs. D. R. Brower, J. G. Kiernan, Harriet Alexander, H. M. Lyman and H. J. Brooks. These physicians, all standing very high in their profession concur in one judgment as to the groom's mental condition. They all find certain physical

*In this the Maryland Court is in error. See *Alienist and Neurologist, 1897, Psychoses of Old Age* by Harriet C. B. Alexander.

symptoms that attend senile dementia, tremblings and twitching of the muscles, tremors of the tongue, hardening of the arteries, etc.; and then all declare upon their oath that this case is a clear typical case of senile dementia, that he is permanently and hopelessly insane, that he must have been totally unable by reason of such insanity to take a rational view of the marriage contract and relation at the date of the marriage and that he was unable to transact any ordinary business."

Expert testimony, upon the part of the complaint consisted of one physician who testified to the absence of senile dementia although it appears there were two others present at the examination made by him, one of whom was placed on the stand but was by no means positive in his testimony. If the question of the existence of senile dementia is to be decided entirely upon the testimony of experts, the court would feel justified in deciding that the five eminent physicians were right in their conclusions as to the mental condition of the groom at the time he entered into this marriage. In addition to the testimony of the experts there were a large number of witnesses, the members of his family, business and social friends and others. Judge Tuley's summary of their evidence has already been cited. "It is said," the court remarks, "by some of the authorities that the test is whether the party was in a mental condition to make a valid deed. A party may be in a condition where he knows that he is making a deed and yet be unable to comprehend the consequence of his act. And so in regard to marriage a party may be in a condition of mind and have sufficient mind to be able to say 'I take this woman to be my wife,' yet be unable to realize the consequences of such a declaration or such conduct."

The first ground upon which it is insisted that this marriage should be declared null and void is the fact that the complainant was the mother of a bastard child and concealed this fact from the "groom." The authorities are not in accord as to whether the fact that a woman had a bastard child before marriage, which fact was unknown to the husband, is or is not, a sufficient ground for declaring the

marriage fraudulent and void. The weight of authority appears to be against the proposition that it is sufficient cause to annul the marriage. If that fact stood alone the court would be justified in refusing to annul this marriage, but the question is whether or not that fact taking into consideration the mental weakness of the man, his dotage and the influences surrounding him at the time that he entered into the contract of marriage, should not be sufficient cause for the dissolution of the marriage contract?"

"The evidence shows that the uncle of the woman schemed to bring about the marriage, that he was in position where he could influence the conduct and action of the "groom" that he did influence it and that he falsely represented the woman to be a fit person for the groom to marry."

"It may be well contended that the groom if he expected to enter into a marriage contract, was thrown off his guard by reason of the action and representations of the bride's uncle and cousin as to her character. In other words, that he did not make the enquiry that he otherwise would have done in regard to her antecedents and character." The doctrine applied by the United States Supreme Court in *Allore vs. Jewell** (although that was in regard to the execution of a deed), appeared to Judge Tuley "to be particularly applicable to this case. It is there held that if a person from infirmity and mental weakness is likely to be easily influenced by others, transactions entered into by such a person without independent advice, will be set aside if there is unfairness in them. Whenever there is great weakness of mind, though not amounting to absolute disqualification arising from age, sickness or any other cause in a person executing a conveyance, and a consideration given, if the amount is grossly inadequate, a court of equity will upon proper and reasonable application of the injured party or his representatives, interfere and set the conveyance aside."

*⁹⁴ United States Supreme Court Reports.

It appears from the evidence, Judge Tully remarks, that as soon as the "groom" was able to comprehend the fact that the bride had given birth to an illegitimate child and she had been a lewd woman, he immediately left the house and refused to live with her any longer. The concealment of the fact of the existence of this child by the woman, the concealment of it by his friend, her uncle, when taken in connection with the scheming to bring about the marriage and the hurried manner in which it was accomplished and the maneuvering to keep the "groom" from having any independent advice or consultation in the matter in Judge Tuley's opinion ought to be sufficient to invalidate this marriage. If it depended entirely upon the question as to whether there existed such a state of senile dementia as to incapacitate the groom from making a valid contract of marriage Judge Tuley would, upon this evidence (which is almost overwhelmingly in favor of that contention) be forced to grant a decree of nullity. In addition to that second ground of contention there is the third one, and that is that this marriage was brought about by a fraud and contrivance of the complainant, her uncle and her cousin.

If that is true, it would not be necessary even that the court should find that the groom was at the time, because of mental derangement, incapable of making a valid contract of marriage. A contract obtained by fraud is no contract. The better opinion says Bishop (citing among other cases *Gillett v. Gillett**) is that if either party is in a state of mental incapacity to resist pressure improperly brought to bear, there is no legal marriage.

As was said by the Illinois Supreme Court in the *Orchardson case*, "the fraud must be taken into consideration with the evidence of mental incapacity" and (quoting from Bishop) "the cases oftenest occurring are where partial insanity or great weakness of intellect is circumvented by fraud and the two ingredients of fraud and insanity thus blending often in matrimonial cases produced

*78 Michigan Supreme Court Reports.

by their united action a nullity which neither alone could effect." "The bride" was a stranger to the "groom." She never had an opportunity to talk with him in her life until the very day and hour that she consented to marry him. It cannot be contended that affection prompted her action nor that affection prompted the action of the "groom." There was no love between the parties and why she should consent, in the manner she did, to marry this old man in his dotage upon so short an acquaintance and under which it took place cannot be explained upon any other theory than that she and her uncle conspired to bring about the marriage, knowing the groom to be a man who was, to say the least, of such weak intellect that they could accomplish their object and purpose."

As said in *Foster V. Means** I have "no doubt but that the complainant availed herself of this imbecility of mind and of the natural instinct which might prompt him to marry either to induce him to propose marriage or to propose it herself with the expectation of securing his property to herself. There could be no other motive upon her part to enter upon such a contract with such a man." Judge Tuley adds that still less could the groom in the present case have entered into such a contract with such a woman had it not been for his great weakness of mind aided by the fraud and scheming of the complainant and her uncle.

Judge Tuley then declared the marriage and the trust deeds null and void. In addition to the alienists cited, Dr. W. L. Baum, who had examined the defendant from a genito-urinary standpoint, testified as to senile changes in his genital organs and presumable incapacity for procreation. The examination by the plaintiff's experts was made in the presence of Mr. Jesse Cox and Judge Wing, attorneys for the defendant, was taken down in shorthand and verified by the plaintiff's experts on their cross-examination. The data found were substantially those noticed by the defendant's experts, to which allusion has been made by Judge Tuley. Arcus senilis was present and other eye

*33 Speer's Equity,

changes secondary to senility. The defendant himself was placed on the stand and displayed the same gaps in his memory (on direct and cross-examination and examination by Judge Tuley) as had been noted by all the experts. The case from either clinical or forensic standpoint needs no further special discussion. It illustrates once more the truth so often told to unheeding ears by alienists of the social dangers of senile dementia. The fact that the clergyman who performed the marriage ceremony failed to detect mental defect can surprise no physician of hospital experience with the insane who knows how frequently escaped lunatics are married. The ease with which five physicians arrived independently at the diagnosis of senile dementia renders difficult to understand, the position of the single expert who failed to detect it.

HEMICRANIA AND ITS RELATIONS TO EPILEPSY AND HYSTERIA.*

By PROF. v. KRAFFT-EBING, Austria.

EVERY experienced practitioner knows that migraine, so common and dreaded, presents extremely diverse clinical types. It is to be readily accepted that this variation in the type of manifestation is due to the different etiology of the cases.

Perhaps the reputed treatment of this disease becomes more successful, if its diverse etiological foundation is understood.

For a long time migraine was known as a constitutional, degenerative neurosis almost exclusively hereditary, which like other similarly conditioned nervous and physical diseases usually manifest themselves at biological periods of life and was described by Lieveing in 1874 and recently by Möbius in their excellent monographs.

The symptoms of this form of migraine, after a longer or shorter prodromal period, are general malaise, unilateral headache of special intensity, optic and acoustic hyperesthesia, nausea and even vomiting, anorexia, cessation of the attack after sleep usually. The face pale, rarely suffused during the attack.

As more rare symptoms of the attack and to be regarded as complications are to be mentioned initial temporary dimness of vision and scotoma (transition cases to hemicrania ophthalmica), olfactory hyperesthesia, ringing in the ears, vasospastic symptoms in the extremities (icy hands and feet). To the knowledge of this classical form of

*Translated by Dr. W. Alfred McCorn, Resident Physician at "River Crest," Astoria, Long Island.

migraine is added that of the hemicrania ophthalmica (Galezowski 1878, Fere and others), *i. e.*, the integrant attendance and domination of eye symptoms (*scotoma scintillans*) in the type of the attack of the hemicrania.

This variety is often that in which the hereditary constitutional form occurs. It may exist from the beginning as such or the migraine scotoma be developed during the course of the trouble.

Under all circumstances this form of migraine is the more severe.

So it is conceivable that here complicating brain diseases frequently occur, which are otherwise foreign to the type of simple migraine.

To be designated as such are unilateral parasthesias, motor and amnestic aphasia, transient hemipareses. Symptoms of irritation in hearing and taste, phenomena of agraphia, alexia, word-deafness, mental blindness (Berbez).

A further advancement in clinical knowledge was the fact, that migraine may have a *symptomatic* import. It has been found as an *acquired* disease originating late in life by reasons of conditions and changes, which lues cerebri, tumor cerebri (Lebert, Wernicke), the process of paresis (Sander, Mendel, Parinaud, Blocq, Charcot) and tabes (Oppenheim, Charcot, Roullet) have induced in the brain.

The tardive migraine thus appears in suspiciously ominous light, but it must not be overlooked, that, in rare cases at least, the hereditary constitutional migraine may first be developed late in life, possibly at the climacteric.

There are no absolutely certain signs of distinction, except hereditary taint and possibly familiar symptoms of the migraine.

It must be admitted, that the symptomatic migraine on organic basis is clinically presented as ophthalmic in the large majority of cases and *gradually* perfected with ophthalmic symptoms, not as in many cases of mild origin and significance. According to my experience very especially ominous appears to me the coincidence of hemiparesthesia in the symptom type of tardive hemicrania ophthalmica. I have here never missed the early occurrence of progressive

paralysis or of organic focal disease (especially excephalomalacia).

But simple migraine, without any of these accompaniments, may also have this ominous significance, as I observed in a 16-year-old girl with progressive paralysis, afflicted with hereditary syphilis, yet without any family disposition to migraine. Consequently in the matter of diagnosis the chief weight should be placed on the absence of any family disposition to migraine.

In view of the fact of a possible symptomatic import of hemicrania the question arises, whether the attacks of this disease may not have a relation to certain neuroses (epilepsy, hysteria).

In regard to this question as to epilepsy Dejerine 1886 (*l'hérédité dans les maladies du Système nerveux*) and Fétré 1890 (*les épilepsies*) have pointed to the extremely frequent occurrence of epilepsy and hemicrania in the progenitors and relatives. Parry, Liveing, Gowers and others consider the two neuroses related and believe that they can pass from one to the other. Möbius refers to the fact that both are very often transmitted and homogeneously inherited, both usually begin in childhood, are manifested in attacks with a tendency to periodicity, often have the same exciting causes, that both may have the same prodromi, aura, polymorphism, incompleteness of the attacks, even status, pass into, respectively replace each other.

In both a permanent "alteration" in the brain must exist fundamentally.

Fétré even went a step farther, in that he held epilepsy and migraine, particularly the ophthalmic, to be equivalent, manifestations of a *common* brain change.

Fétré (*Revue de Med.* 1881 and "*Die Epilepsie*," German by Ebers 1896) declares eye migraine to be simply a "partial sensory epilepsy." This can be developed from simple migraine, but generally exists as such from the beginning. For years this sensory epilepsy may be limited to the eye symptoms (scotoma or hemianopsia, or both simultaneously). The symptoms of eye migraine could also be dissociated, in that the complemental migraine with vomiting follow a

transitory amblyopia or scotoma after a few days. Aphasia, paraesthesia of one side, hemiplegia may be accessory to the complete or incomplete eye migraine. But it may also happen that these symptoms occur paroxysmally in the same individual induced by the migraine. Epilepsy and especially its partial form is a frequent accompaniment of eye migraine.

The cases presented by Fétré and others of epilepsy connected with such, respectively arising from them, are almost exclusively cases of ophthalmic hemicrania.

Gowers also calls attention to the fact, that in all his twelve cases of migraine transformed into epilepsy, the first had been attended by sensory aura.

In my experience also I do not know of a single case, where a simple migraine could be clinically related to epilepsy and consequently the occurrence of simple migraine and epilepsy in the same individual must be considered a mere coincidence, i.e. a complication, readily explainable by the great frequency of both neuroses of themselves and particularly in hereditary taint. The following cases chosen from many similar ones, is evidence of this assumption.

Case I. K., 19, laborer of a neuropathic family, not epileptic nor afflicted with migraine, somewhat feeble minded, has had frequent classical epileptic seizures since 13, which are not preceded by an aura. He is very irritable since his disease began and would kill himself on being refused the slightest wish. Therefore he was brought to the clinic. There it was ascertained that he had had attacks of migraine since 12, usually the most violent on the left side and recurring at intervals of a few weeks. Eye symptoms never occur in these attacks.

Fétré's thesis on the epileptic import of (ophthalmic) migraine, requires according to my experience qualification and also amplification. In almost all cases within the scope of my observation where clinical relations between migraine and epilepsy were not to be proven, it is a matter of eye migraine, but on the other hand I have noted a large number of cases and followed them through a term of years, in which migraine ophthalmica existed alone, but where no

epileptic foundation or only epileptic symptoms were to be proven.

Féré's view could only really exist, when the eye symptoms could be proven within the type of the migraine as something not belonging to it of itself but ascribed to epilepsy, then as a part of epilepsy within the migraine, which thus becomes an epileptic migraine. But prior experiences are insufficient, and it must remain an open question whether the eye migraine is clinically related to epilepsy in all cases. The clinical prognostic importance of the solution of this question is evident.

But that eye migraine *may* have such clinical relations, might be made clear by the following observations. On the other hand Féré's thesis needs amplification, in that those of an attack of sensory Jacksonian may have the same import as the eye symptoms in migraine.

In this rare combination of migraine the right to assign the sensory Jacksonian phenomena to epilepsy seems still greater than in the eye symptoms.

A preliminary question arises, namely: Whether the symptoms of an attack of sensory Jacksonian may be regarded as equivalent to those of a motor.

Facts, which I have observed in motor Jacksonian due to organic disease, in those attacks induced by hysteria, as well as in paretics, where sensory attacks may be observed as equivalent to the motor, justifies me in this assumption.

Pitres (*Revue de med.*, 1888, viii), offers the evidence, that not merely sensory, but even psychical attacks may replace the motor Jacksonian.

Oppenheim (*Handb. d. N-Krankheiten*, p. 437) claims that partial (Jacksonian) epilepsy may affect the sensory sphere, in that paraesthesia precedes the convulsion, accompany the twitchings, or "in that the paraesthesia is the only symptom of the irritable state, then forms in a certain measure an equivalent of the attack."

It is of no slight interest that in the large majority of cases of symptomatic migraine (tabes, general paresis, etc.) its form is the ophthalmic or that accompanied by the symptomatic migraine, so that it might be attempted to recog-

nize the symptomatic migraine exclusively in these two forms. This point of view deserves being determined at any rate in the investigation of the clinical relations of migraine to epilepsy.

If it is attempted to go deeper into the question on such a basis, cases are offered, in which the same individual has in the same attack an epileptic and migraine seizure, *scotoma* appears as their common *aura*. This may besides acquire a direct import pointing to epilepsy, when it is of a red color. While the migraine always remains the same, the epileptic complimentary phase of the general attack may vary.

In the following nine cases three times it is a matter of classical epileptic seizures (cases 2, 3, 4), six times of sensory Jacksonian (cases 5-10). In one this introduces the general attack (10) so that in this single case, where no visual *aura*, *i. e.*, *scotoma* exists, it appears as though the paraesthesia (sensory *aura*) might be the representative of the *scotoma* of migraine.

In one of these cases (7) a state of post-epileptic confusion followed the attacks of sensory Jacksonian, at least a noteworthy fact in support of the theory of the significance of attacks of sensory Jacksonian as possible equivalents of motor, chiefly epileptic seizures.

Of no slight import is the fact, that some such epileptic seizures occur only at the time of attacks of hemicrania in the following casuistics, never as sporadic and isolated from the hemicrania.

The clinical connection then becomes undeniable and the above presumption that epileptic and hemicranial change or disposition in the brain are very closely related, is almost a certainty.

The observations, which justify such conclusions, are the following.

It is comprehensible that in all the most careful observation and examination, by means of the ophthalmoscope even, discover no focal symptoms, no signs of an organic brain disease, so that the objection to an organic symptomatic limitation to epileptic and hemicranial symptoms becomes untenable.

Case 2. Mrs. W., 43, whose mother was very nervous, neuropathic even, has had an habitual hemicrania since puberty. Climacteric about a year ago. The migraine has become very violent during the last four months and been associated with *scotoma*. During this time at the acme of the attack classical epileptic seizures.

Case 3. Mr. R., 34, of an apparently healthy family, unaffected by lues, *potus nimius, trauma capitis*, has had ophthalmic migraine since twenty years of age. When the attack is especially violent he has an epileptic seizure at its acme (loss of consciousness, general tonic-clonic convulsions, bites his tongue, etc.) Such attacks occur four times a year and are followed by malaise and mental apathy for twenty-four hours.

Case 4. Miss K., 18, has a mother and sister who have simple hemicrania.

The patient had convulsions at the age of 5, almost continual cephalaea since childhood, was a dull, stupid pupil and at 13 had attacks of right hemicrania (headache, vomiting,) which are preceded by black *scotoma* filling the greater part of the visual field. After a few months genuine epileptic seizures were associated with these attacks of hemicrania at their *acme* (loss of consciousness, suggillations, biting the tongue, etc.,) which recurred every few weeks, but never appeared as spontaneous paroxysms, *i. e.*, independently of the migraine.

In the meantime, and quite often the symptom complex of ophthalmic migraine occurred without being combined with epileptic phenomena.

She began to menstruate at 15, but puberty had no influence on either neurosis. Whereas from that time hysterical phenomena (*globus*, concentric contraction of the visual field, bilateral ovarian tenderness, etc.) presented themselves.

At 17 she was a frequent witness of the epileptic seizures of a boy. She then became very emotional and at 18 had Jacksonian epilepsy in the right upper extremity, which had no relation to the hemicrania, unattended by clouding of the consciousness, pupils not fixed, the seizures occurring

from once to five times a day and appeared like poor imitations of true Jacksonian attacks the patient had seen in the boy. Under bromides the attacks of epilepsy and ophthalmic migraine disappeared, while the hysterical imitations were unaffected.

Case 5. Miss S., 17, mother nervous and afflicted with hemicrania. She menstruated at 12, since then has had constitutional neurasthenia and an almost constant head pressure.

At 15 habitual migraine developed. Four times in the last two years it has been accompanied by hemianopsia and scotoma. Sometimes during these attacks, which are differentiated from the habitual menstrual, by their not occurring during menstruation, a sensory Jacksonian attack lasting an hour occurred on the right side of the face, tongue and hand.

Case 6. S., mechanic 58, apparently untainted, has had ophthalmic migraine since childhood. The attacks occur sixteen to thirty times a year and have increased in frequency of late. The attack begins with a dark spot in the visual field, followed by a headache on the same side. Rays of light are found at the periphery of these scotoma.

The migraine scotoma lasts about half an hour until the occurrence of the pain. The ophthalmic symptom occasionally consists of a white, glittering C or Z, which appears first in one eye, then in the other, "as an undulating, light sparkling letter, which passes obliquely across the visual field." This letter is developed from a white speck.

At the acme of the pain then following the patient is giddy, unable to think, has a feeling of painful confusion and a "horrible" sensation, *i. e.*, he is conscious of a numbness in the face, tongue and upper extremity on the same side as the pain, is unable to speak and has the feeling of being paralyzed (sensory Jacksonian).

Case 7. Miss V., 18, menstruated at 15, apparently untainted, has had ophthalmic migraine since puberty, which at first lasted only an hour and a half, but of late four hours. At the acme of the attack, about half an hour

after the occurrence of the scotoma, sensory Jacksonian occurs (face, tongue, upper extremity), and on the same side as the pain. For a day after the attack the patient complains of vertigo, is forgetful, abstracted, confused, dazed, lets everything fall from the paraesthetic extremity, hence acts very awkwardly. She has only a summary memory of this post-migraine (post-epileptic?) stage.

In the interval she is perfectly well. Epileptic ancestors are wanting.

Case 8. Miss Z., mother has migraine, father irascible, several brothers and sisters have died of convulsions.

Menstruated at 14. *Commotio cerebri* at 18. Hemicrania began three months later. Attacks about every eight days.

Begin with scotoma before both eyes. These disappear in about twenty minutes. Then a feeling of numbness in the right upper extremity extending upward from the fingers. After about ten minutes the paraesthesia of the right upper extremity lessens, but now passes to the lower lip, tongue, so that the patient's speaking is affected. Headache now for the first, which is localized on the whole left side of the head. Nausea accompanies the whole attack. Vomiting rare.

Case 9. H. M., dress-maker, father nervous, irascible, who has "headache" a great deal. Her sister presents the same anomalies.

Patient has been of a nervous, excitable temperament since childhood, menstruated at 15 without special trouble.

The patient has had headache since nine years of age, which occurred twice a week, began during sleep, lasted all day, located in the left temple, when especially severe spread over the forehead to the right, accompanied by yawning and anorexia. At first they were attended by nausea and vomiting.

About the same age attacks of sensory Jacksonian with scotoma, acousma and aphasic symptoms occurred, which regularly passed into an attack of ordinary migraine.

This second category of attacks occur at intervals of three weeks to a month, without cause, suddenly, always

in the morning. The attack affects the right side of the body and lasts until it is transformed into the usual migraine on the left side in one half to one quarter of an hour. Without any premonitions the patient feels a "pricking of needles" in the right half of the tongue; in one to two minutes this "pricking" extends to the gums and the buccal mucous membrane of the right side of the mouth. Then a feeling of numbness and swelling occurs in the right half of both lips. After a few minutes the eye, ear and hand of the right side are simultaneously attacked. The right visual field seems filled with shining rays on a dark ground. She cannot see on the right side of the visual field, unless she turns her head to this side. While the scotoma disappears, roaring in the head, ringing in the right ear occurs. She does not hear her own voice; that of other people seems to come from a distance, as though her ear was stopped up. A feeling of stiffness and formication then occurs in the right upper extremity, which begins in the thumb, successively attacks the other fingers and extends from the finger tips to the elbow, possibly to the shoulder.

At this time the patient must talk slowly and at a great effort, because otherwise she confounds words or letters at least, *e. g.*, says "rützt" for "nützt". It repeatedly happens that she cannot pronounce at first the names of common objects and finally compounds words falsely, *e. g.*, "knife-pen" for "pen-knife", which never occurred other than in the attack. She was painfully conscious of her aphasia and the incorrectness of her language.

Consciousness in such an attack is perfectly clear, the disposition depressed, emotional. The color of the face presents no change.

The patient is of good intelligence, somewhat anaemic, offers no signs of a derangement of the nervous system, except the deep reflexes are greatly exaggerated and marked tenderness in the region of the left ovary. Fundus normal. Residues in both tympani of repeated disease of the middle ear.

Case 10. September 29th, 1896, L., 23, married,

book-keeper, asked protection of a policeman on the street from two men he fancied were following him, appeared mentally deranged and was taken to the psychiatric clinic (Vienna).

On admission the patient was disturbed, emotional, confused, afraid of those about, soon became quiet, went to sleep, and, after a few hours, awoke lucid. He only remembered that he had left the house about seven o'clock to go to the office, which he did not reach; of all that occurred until coming to himself at the clinic, the patient has absolute and permanent amnesia. His father, whose sister has epilepsy, is very nervous and excitable. During the first dentition period he had convulsions, also during typhoid while a boy. He was nervous and very irritable since childhood.

Five years ago an epileptic seizure in the theatre, probably from alcoholic excess, which was followed by a series of convulsions for three days. In June, 1896, another series after alcoholic excess. Since then frequent sporadic seizures in the evening.

For five years the patient has had an attack of petit mal every two or three weeks.

For some years the patient has had attacks of hemi-crana, which are very readily induced by emotion, quickly disappear on the administration of antipyrine and on going to sleep. The attack begins with paleness of the face, paraesthesia (feeling of numbness) in the left hand, which lasts several minutes.

Pain then occurs in the right temple, which passes to the left temple and orbit and remains fixed. The left palpebral fissure becomes narrower and the patient optically and acoustically hyperaesthetic. Scotoma and vomiting do not occur. Chronic paraesthesia of the left hand is accompanied by hesitating speech. Consciousness is unclouded.

In the interval the patient feels perfectly well and capable of work. Cranium and facial bones slightly asymmetrical. No signs of focal disease. Ophthalmoscopic examination negative.

In the following cases hemicranic and epileptic sym-

toms are dissociated, separated from each other in point of time, but united clinically by common eye symptoms, which however, may be regarded as the visual aura of an epileptic seizure or as migraine scotoma.

It may consist merely of the aura (abortive attack) or the "aura" pass into an attack of epilepsy or migraine. Isolated migraine with scotoma (visual aura) then evidently seems to be the equivalent of an epileptic seizure. On the other hand epilepsy, accompanied by a visual aura (11) and followed by post-epileptic vomiting and hemicrania (15) may be regarded as an equivalent of migraine.

The following six cases with invariable migraine symptoms show the polymorphism of epileptic phenomena. In case 15 confusion replaces the motor symptoms.

In this respect case 16 is especially interesting, in which at first only scotoma appeared, later epileptic seizures introduced by them. After temporary suppression of the epilepsy by attacks of scotoma with migraine, the epilepsy has recently reappeared, but in form of a physical equivalent accompanied by scotoma.

This temporary substitution of one symptom complex by another is a frequent occurrence in epilepsy.

This is interestingly shown in case 11, in 12 with respect to hemicrania.

Case 11. G., 17, school boy, of an apparently untainted, but tuberculous family, has had hemicrania, mostly on the left side, with a very brief initial scotoma since his tenth year.

At 16 classical epilepsy occurred from no apparent cause. His head always became hot, for a moment the whole visual field was filled with a dark red color and then he became unconscious. Occasionally a post-epileptic hallucinatory condition follows the convulsive stage, when he always sees a market place in Vienna, which at first is very large but always grows smaller until it seems a mere point. He sees twenty or more buildings in a row, which threaten to crush him, so that he is greatly frightened and crawls under the bed. Subsequently the whole affair seems like a dream.

Since the occurrence of the epilepsy the attacks of hemicrania have become much milder and more rare.

Case 12. Miss G., 40, cranium slightly rachitic. Mother had ophthalmatic hemicrania. The patient has had the same trouble since childhood. The migraine is preceded by a scotoma of short duration. Occasionally the headache does not follow it.

After intense emotion and influenza at 38 classical epilepsy occurred, which always began with visual aura (stars, sparks, scotoma). Since the advent of the epilepsy the attacks of migraine have become more rare.

Case 13. Miss L., 19, came under my treatment in September, 1889.

She is of a nervous family, but had never presented any neurotic symptoms previously, nor been seriously ill, menstruated at 15 without any attendant trouble, has never manifested any hysterical or epileptic symptoms, had been cheerful and enjoying life until 18, when she became very emotional over marriage complications, which were satisfactorily adjusted. After intense affect and a chill from sea bathing during menstruation six epileptic seizures in which she bit her tongue, occurred one night in August, 1888. Since then she has been nervous, irritable, emotional. Of late generally intensified seizures in November 1888, January, May, June, July, September 1889, which always ended in vomiting and were usually premenstrual. The attacks occurring previously as simple epilepsy acquire a peculiar clinical interest through the following statements of the patient. The beginning of each attack is the vision of a bright disk of the most diverse colors, occupying the left visual field exclusively. The disk often becomes smaller and then disappears. Then the attack does not occur. If the disk instead of getting smaller grows larger the attack occurs as soon as it fills the whole visual field.

There is no memory of these occurrences.

The findings of an eminent gynecologist were entirely negative. A healthy girl, no anaemia, no disease of the vegetative organs and absolutely no stigmata hysterica. No pain from pressure on the left supraorbital foramen, but the

immediate appearance of a golden circle, which disappears as soon as the pressure ceases. The patient is very anxious, evidently fearing a new attack. She states the disk is similar when an attack impends. She describes the circle as yellow outside and dark blue within.

Pressure over other portions of the trigeminus, on the bulb etc. does not cause these light phenomena.

Sodium bromide 3,0-4,0 pro die was ordered.

On May 18th, 1890, the patient gratefully stated that for eight months under this treatment she had been free from all morbid symptoms. On the 17th a "vision" occurred for the first time. She saw a red shining ball three times before the left eye, then the usual bright disk. All quickly disappeared with quiet and cold compresses, but on the 18th the patient had a feeling of great weakness, as after an (epileptic) attack though none occurred.

On June 19th 1893 she wrote that by continuing the bromide treatment she had been free from convulsive attacks, while she often has "visions," particularly after excessive use of her eyes, (since the winter of 1890-91).

She differentiates two kinds:

1. Sparks as from an electric machine, which glide along before the left eye as on a spider web and suddenly turn into a shower of sparks. Then a dark spot before both eyes, which gradually becomes violet blue, surrounded by bright stars and disappears after about three minutes.

2. The appearance of the bright disk. It almost always precedes the hemianopsia for ten minutes. Then two glittering points appear, from which a scotoma is developed extending over the whole visual field and is of the most different colors "like a kaleidoscope." While the bright disk occupies the whole visual field vertigo and *violent pain in the head and eyes* occurs, and on the side opposite to the migraine scotoma. These attacks last 25 minutes. They may be shortened by phenacetine 0,5, while antipyrine is ineffectual. In December, 1893, I had occasion to examine the patient again. She had been happily married for four months, free from epileptic seizures under bromide 3,0 daily, had rare attacks of hemicrania ophthalmica gener-

ally during menstruation, first on the right, then on the left, but mostly on the left. But the hemianopsia was always bilateral. Pressure on the left supraorbital nerve still suffices to induce flashes of light.

Case 14. W., 14, school boy, of a perfectly healthy father, but his mother is an extremely nervous woman. His brother had ophthalmic migraine at puberty. A brother of the father had the same.

The patient is an intelligent boy without a sign of degeneration. He has never had convulsions. Since his ninth year the patient has complained of a scotoma appearing periodically before the left eye, which he calls his "sun." It occurs after slight physical or mental exertion, never lasts longer than six minutes and was usually followed by an intense headache on the right side.

The patient describes his scotoma as follows:

A circular disk appears before the left eye alone, which is completely surrounded by rays. This disk presents an upper irregular field of blue, a similar middle one of green and a much larger one of yellow. The rays are silver white and intensely brilliant, like the color fields of the disk. The disk increases in size and finally occupies the whole right visual field. There are occasional moments when all is black before the right eye. The left eye is unaffected.

After the tenth year true epileptic seizures followed very intense attacks of scotoma. He had six of these on the day of consultation, (October 19th, 1895). Since then he has dreaded the appearance of the "sun." He then becomes anxious, excited, disturbed. If the "sun" continues to grow larger he knows well that a convulsive attack impends. He complains that the sun affects his brain and quickly loses consciousness. So long as he takes bromide (4,2 daily) the epileptic seizures are controlled, the attacks of migraine are more rare and usually limited to mere scotoma without headache.

In the intervals the patient is perfectly well. Ophthalmoscopic examination negative. Sodium bromide 3,5 with antipyrine 0,8 *pro die* ordered.

Under this treatment no epileptic seizures and migraine scotoma rare.

Case 15. D., 26, working woman, whose mother and sister have had simple migraine. Since puberty the patient has had attacks of migraine, always pre-menstrual. In the beginning she had scotoma, which is compared to the dancing of dust in a sunbeam. At the same time she sees nothing from her left eye. This scotoma lasts ten minutes. Headache follows it. For two years in about every second attack, which then develops especially intense migraine scotoma, she becomes confused, as at first, tries in vain to articulate, does not respond to questions or contact, lets fall anything she has in her hands, wanders about in a dazed condition with eyes open and pupils dilated. This state lasts as long as the scotoma, *i. e.*, ten minutes. She then comes to herself with headache and does not know in the least what has occurred during this time (psychical equivalent of an epileptic seizure). In this period of the attack she is pale, while at the time of the headache her face is hot and suffused. Five months previously she had the first true epileptic seizure while asleep. When the convulsions were over she had her usual migraine. Since then frequent recurrence of the epileptic seizures, generally at night when asleep, so that nothing is to be ascertained as to the migraine scotoma, yet when she comes out of the seizure she always has hemicrania.

No morbid symptoms in the interval. Under bromide (5,0) the seizures cease.

Case 16. P., 29, mechanic, of neuropathic constitution, father unknown, mother neurotic, who committed suicide, had convulsions when a child.

Since 19 violent attacks of scotoma, generally on awakening, lasting for one minute without other attendant symptoms of hemicrania.

Under bromide treatment these attacks disappeared. Recurred at 18. Again disappeared under bromide.

On suspending the bromide the attacks returned. In 1890 in connection with an attack of scotoma the first epileptic seizure. Now in spite of bromide (10.0 *pro die*) the

epileptic seizures continued, always preceded by scotoma. Instead of this occasionally mere fainting spells.

In 1891 he strangled his mother during a state of post-epileptic excitement. Amnesia. No more epileptic seizures since April 7th, 1895, but frequent scotoma as an aura of genuine attacks of hemicrania, without any disorder of consciousness, and of three hours duration.

On December 25th, 1895, slept well after drinking half a litre of wine. On the morning of the 29th scotoma, followed by a state of epileptic psychical excitement of several hours' duration, without convulsions. Amnesia.

Cranium rachitic. No scars on the head. In February, 1896, two such attacks. Under 10.0 of bromide cessation of these attacks, as well as those of ophthalmic migraine.

The following propositions may be formulated as corollaries from the above cases and as points of view for further research:

1. There are hemicranias differently qualified diagnostically and prognostically. Two varieties of migraine may occur in the same individual (case 5,9).

2. Hemicrania may have a symptomatic significance, as in organic brain diseases, as well as in the neuroses (epilepsy).

3. Ophthalmic migraine and that combined with sensory Jacksonian very often have a symptomatic significance, almost certainly when the hemicrania is acquired (not inherited) and tardive.

4. The migraine clinically related to epilepsy seems exclusively related to the three categories cited, at any rate no evidence exists, that a simple migraine could play such a role.

5. The external sign of clinical homogeneousness of hemicrania and epilepsy is principally a common visual aura, which may occur as a red color (case 11). This common visual aura is the more worthy of note, as it becomes *qua* migraine scotoma neither the ordinary migraine or *qua* optical aura of simple epilepsy, produces rather special clinical types of both neuroses.

If the conditions for the manifestation of this common

symptom were well known, the insight into the clinical homogeneousness of both neurotic types would be greatly facilitated.

It can not be doubted that this visual aura is a symptom of a clinical entity.

It is possible (case 10), that sensory Jacksonian, quasi as a sensory aura may replace the optical. How this aura (optical, possibly sensory) as a common symptom of two neuroses acquires relations to those permanent brain changes, which we must assume for hemicrania, as well as for epilepsy, is very vague.

Facts indicate that this is the more readily possible, when the hemicrania is associated with symptoms, which indicate a territorial extension in the cortex not occurring otherwise.

6. The visual aura may occur sporadically (abortive attack), bring about an attack of hemicrania or epilepsy, or replace both.

In the latter case the one neurosis cannot be regarded as the agent provocateur of the other; both rather are equivalent to each other, to be referred to a common brain change differing in intensity or extent.

7. The(migranous) epilepsy and the (epileptiform) migraine may replace each other. In the first instance psychical and convulsive attacks are possible as substitutions.

8. Where migraine and epilepsy are clinically related, the latter appears as sensory Jacksonian (cases 5-10) possibly postepileptic psychical seizures (7.), as classical seizures (2,3,4) possibly also as a psychical equivalent (15, 16).

9. Ophthalmic migraine is always suspicious of an epileptic significance, almost certainly when epileptic migraine is to be regarded as that combined with sensory Jacksonian.

Epileptic attacks of any kind with visual aura (11-16) always suspicious relations to migraine, but very particularly unilateral headache with vomiting (13), when they appear only with temporary hemicrania, never in the interval.

10. Hemicrania also needs a differentiation therapeutically according to its etiological forms.

The migraine clinically connected with epilepsy may be benefited by anti-epileptic treatment (13-16). Bromide combined with antipyrine proves especially useful.

Much greater are the difficulties met with when it is attempted to establish the relations between hemicrania and hysteria. Owing to the frequency of both neuroses, particularly in the female sex, that a coincidence of the two may exist, is to be admitted *a priori* and is recognized by every practitioner. Also the coincidence of hemicrania and hysterical seizures in point of time need not seem strange, for emotion may be the agent provocateur of both. French authors (Charcot, Babinski, Fink and others) go even farther, in that they assume a clinical connection between the two neuroses.

The conclusive case for this clinical conception is the following reported by Charcot in his *Lecons du mardi à la Salpêtrière*, 1887-88, p. 10:

Prud—, 21, engraver, from *conjunctivitis* had attacks of lacerating pains and dimness of sight, which recurred at the same hour daily.

After emotion at the end of January he had the first attack of hysteria *gravis*. This attack recurred daily at the same time until the middle of February and appeared without *prodromi*.

From then an aura (pain, which extended from the vertex to the left eye, then scotoma, which filled the whole visual field) preceded it by a quarter of an hour.

This aura (migraine scotoma) often occurred without being followed by an attack. Quite often, instead of this visual aura, mutism appeared before the hysterical attack. Under bromide treatment (3-5.0) the hysterical attacks disappeared and the migraine symptoms became milder.

Babinski, who reproduces this case (*Archives de neurologie*, 1890, XX. 60) favors the significance of the hemicranial symptoms in this case, in that they often occur as an aura of a hysterical seizure, further that this hemicranial aura is occasionally represented by a specific hysterical symptom

(mutism). Therefore this equivalent hemicrania must be regarded as hysterical. In support of this assumption, that hemicrania may be a syndrome of hysteria, Babinski presents three more cases, but in which he regards only the first and second of the whole number as evidential.

His second case is a girl of 16, who for three months has had daily simple migraine on the right side, after ten days pains occurred at the sixth dorsal vertebra, in the *supra-* and *infra-mammary* region, five days later local hysterical spasms (*globus*, clonic spasm of the right eyelid) with ophthalmic migraine, when the migraine could be induced from the sixth dorsal vertebra (*point migrainogenie*.)

His third case was a young lady of 22, who had *pavor nocturnus* for three to five years, the first attack of ophthalmic migraine occurred at 16 after emotion, which was followed by another with loss of consciousness and convulsions. Fourteen days later scotoma for one hour followed by hemicranial pain for several hours.

Such attacks of ophthalmic migraine after that recurred about every fourteen days while asleep, and were repeatedly benefited by bromide. Recently (without the bromide) attacks daily, but being restricted to mere scotoma. Pressure over the left ovary produces it experimentally, but feebly each time, the same emotion or also its mere memory, while they were benefited by suggestive treatment.

Babinski's fourth case is a girl of 21. Attacks of hysteria *gravis* for four years, ophthalmic migraine for two months, with whose occurrence the attacks of hysteria have disappeared. These attacks of migraine are induced and relieved *ad libitum* by hypnotic suggestion.

At any rate these cases show a close clinical connection of both neuroses, in so far as the ophthalmic migraine may become an aura of a hysterical seizure, permanently replace such attacks, even by irritation of a hyperaesthetic cutaneous area, but which does not prove to be spasmogenic, in one case even produced by hypnotic suggestion.

In another case, in which a mere memory sufficed to induce migraine scotoma, this is also capable of being caused by pressure on one ovary.

We must always beware of hasty conclusions. That in hysteria, which may imitate everything possible, even organic spinal diseases, migraine may also be induced by psychical influences, that in the very intense and parodoxical susceptibility of the nervous system in such patients a mechanical irritation is able to do this, should not seem strange. However, it is striking, that from the champions of the opinion that migraine may be a syndrome of a hysterical neurosis or equivalent of a hysterical seizure, only thirteen of such cases could be cited until 1891 (see *Gilles de la Tourette traité de l'hystérie*, p. 379), of which the majority are not unobjectionable and only prove a coincidence of ophthalmic migraine and hysterical syndromes.

In view of this fact it must remain an open question, whether migraine may play the same role with respect to hysteria, as it actually does to epilepsy.

Previous observations indicate, that in hysterics psychical and mechanical irritants exceptionally suffice to induce an attack of migraine, and that an attack of migraine may be the agent provocateur of an hysterical seizure, in the way somewhat that the area of hemicranial hyperesthesia becomes temporarily or permanently a spasmogenic zone, analogous to numerous cases (Schützenberger, Baetian and others), in which another nerve affected with neuralgia acquires this importance. Under all circumstances, and analogous to epilepsy, only ophthalmic migraine could possibly attain the significance of a syndrome or equivalent of the hysterical neurosis, for the certain differentiation of simple migraine from certain cases of *clavus hystericus* with sensory hyperesthesia and vomiting, as well as from so-called pseudo-meningitis hysteria, is a doubtful fact.

In my experience I find numerous cases of simple and ophthalmic hemicrania in hysterics, but not one, in whom the attack of migraine could be interpreted as a syndrome or equivalent of the hysterical neurosis; whereas I know of several cases, in which the attack of migraine was evidently the agent provocateur for the recurrence of hysterical seizures, whence it may be assumed, that the area of migraine had temporarily taken the role of a hystero-

(*spasmo*) genic zone. Inversely the hysterical attack may provoke the migraine.

The following cases may serve as such examples:

Case 17. Mrs. Z., 35, has had ophthalmic migraine since 30. No instances of this trouble in the family. Her brothers and sisters are extremely neuropathic. Since 25 this extremely nervous woman has had attacks of hysteria *gravis*. These almost exclusively follow emotion and recur at intervals of weeks to months. The hemicrania developed five years ago after pregnancy. It is never sporadic, but always appears as a result of hemicranial attacks, which begin with headache on the left side and last for one to two hours. In more rare instances, the hemicrania develops at the acme of the attacks, apparently from the hysterogenic zone, but usually in connection with the convolution. The hemicrania is always located on the left side and lasts for two days. Following it, inability to turn the head to the left exists for about fourteen days.

Large, handsome woman. A circumscribed area over the left parietal eminence is hyperalgesic in the intervals and sensitive to pressure, as well as the left ovary. No other stigmata hysteriae.

Case 18. Miss T., 21, from France, governess, of a neuropathic family. Parents and all her brothers and sisters have hemicrania, also one sister has hysteria *gravis*. Patient very talented, has had no serious illness, but afflicted with typical simple migraine since 15. Since her first menstruation she has had occasional attacks of hysteria *gravis*, the last one a year ago. Owing to the family's loss of property the patient has recently had to take a position as governess. She became very emotional over this, on October 7th, 1893, had an attack of hysteria *gravis* (laughed, cried, threw herself about, rolled her eyes, ground her teeth, raved about flowers, her father had become insane, she would also, protests, etc.).

This condition lasted until admitted to the Clinic (October 9th) and ceased on October 10th. Only summary memory. Patient claims her migraine has never been ophthalmic.

Worthy of note are mouches volantes and erythropsia in the fixation of objects. Besides clavus and sensitive ovary, she presents the true hysterical character.

On October 14th, 19th, 20th and 29th, the above described and purely psychical attacks of hysteria gravis occurring as insignificant convulsive symptoms have recurred. Their starting point is evidently the clavus. In the majority of attacks it may be proven that hemicrania preludes and accompanies them. The patient confirms this from her previous experience. The parietal eminence (clavus) is given as the starting point of the hemicrania.

On November 6th, the last attack of hysteria gravis (merely delirium, which was about flowers, but with terrifying hallucinations periodically), of four hours duration with initial migraine and evidently inducing the attack. During the attack of hysteria headache on one side, but without any relation to the delirium. On December 20th, the patient was discharged "recovered".

Case 19. Early July, 1896, M. K., 22, single, was brought before the magistrate by one of the police, whom she had accosted with the words: "You are my doctor." She seemed confused, excited, expectorated constantly, presented marked change of disposition, complained of violent headache, owing to which she had already been repeatedly in confinement. Owing to great restlessness and fear she had gone to Vienna, looked for some place to drown herself all day, as she no longer enjoyed life. She then began to whistle and sing. Brought to the Clinic, she is still somewhat confused, has only a summary memory of recent events, is fearful, unstable, presents great change in disposition, erotic manner. She complains of headache, presents pressure pain points over the left supraorbital and temporal nerves, left hemihyperesthesia, concentric contraction of the visual field, otherwise no hysterical stigmata. On the night of the 20th the patient slept well. Menses began on the 20th, with violent colic and exacerbation of the headache on the left side, with the attendant fancy that someone had stepped on her head, but which idea is not retained. Patient is no longer

confused, but emotional, fearful, first erotic, then depressed from *taedium vitae*, the whole picture of marked hysterical stamp. With the cessation of menstruation on the 25th, these symptoms disappeared. Patient became quiet, oriented, appeared mentally dull, somewhat defective ethically and gave the following anamnesis:

Alcoholism, insanity and tuberculosis have often occurred in the family. Her father died of phthisis, one sister committed suicide in an insane asylum, her mother choleric.

Patient has a rachitic cranium and evidence of rachitis elsewhere in the skeleton. She had the usual diseases of childhood, also attacks of hysteria *gravis* from 9 to 15 from a severe fright. These have occurred again since 18, but rarely.

From 14 to 17 the patient had traveled about with a concert troupe. She returned home and became reconciled with her mother over quarrels about a man whom she should marry against her will. When the patient was nearly 19 she became pregnant and in an abnormal (hysterical?) psychical condition attempted suicide by a solution of phosphorous and by jumping from the window. Since that occurrence attacks of violent headaches on the left side, preceded by seeing black rings before the eyes, still without *mouches volantes*; at their acme nausea.

This hemicranial symptom complex has since been related to attacks of hysteria *gravis*, in so far, according to the patient's statement, the aura of the globus and vertigo have been associated with scotoma and headache.

During the past year the convulsive attacks of the hysterical neurosis have become very rare. But following the above symptoms of aura psychical attacks more often occur in the form of confusion, agitated restlessness, *taedium vitae*. In one of these attacks she jumped into the river. Owing to such attacks the patient has been in the insane asylum twice, has been at times a waitress and mistress. One day her lover was arrested as a swindler (July 7th, 1896.) She fled in fear to her mother at Graz. From then on hemicranial seizures with agitated confusion, *taedium*

vitae and terrifying sense deceptions became more frequent. She was kept at home. In connection with such a seizure she fled to Vienna (July 17th) to seek employment.

On the 18th hemicrania began, she became confused, was again fearful, had taedium vitae, wanted to jump into the Danube, gave away her effects, as they were useless to one traveling, and wandered about the city. She summarily remembers having tried to pray in several churches, but failed to do so from restlessness and fear. She has also been to a cemetery to see how her future resting place looks. In the evening, with exacerbation of the headache, she became more confused and was arrested in this condition.

During the following weeks of observation the patient presented traces of psychical degeneration, as well as those of a hysterical character. Recently attacks of migraine or hysterical delirium were no longer observed.

CHRISTOPATHY AND CHRISTIAN SCIENCE (SO-CALLED).*

By C. H. HUGHES, M.D., St. Louis.

ILLUSION, hallucination and delusion, rational or irrationally founded, have moved the moral world almost as much as Truth, and at times in history, scintillations of truth have flashed upon minds diseased. Disease of the nervous system involving the brain and mind in delusional disorder has destroyed and restored dynasties, founded and remodeled religions, lifted up or cast down peoples, helped or harmed, brightened, darkened or destroyed human life or welfare. By these states of brain and mind the happiness of individuals has in these and in many other ways, been made or marred in life.

A young unlettered, demoniac paranoid peasant girl of France, obeying the imaginary voices of heavenly command and under dominion of visual, olfactory and auditory hallucinations, questioning them until her mind passes into delusion, leaves her humble home to re-inspire a dismayed, dispirited and almost defeated army with her heaven-born mission and lead it to victory. Under its delusive and potent sway, a monarch is restored to his throne and she herself is finally brought to the stake.

To Mohammed's hallucinations of hearing and sight as well as to his epilepsy, is due the revelations of the Koran. He is said to have heard the stones and trees about Mecca greet him as a Messenger of God. Swedenborg, who claims to have been in constant communication with the denizens of heaven, felt his hand clasped and squeezed by an invisible person after an appeal and prayer to the omnipotent Christ. He had visual as well as auditory hallucinations

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and hallucinations of other senses. The delusions of the critical Luther, who attributed his neurotic condition to diabolical influences, are too well known to be recounted. The ink-stand incident is but one of many in the career of this over-wrought theologian whose hyperesthesia, cerebral vertigo, instability and hallucinations, have so often been discussed by writers of psychiatry. The cure of Melanthon's malady by Dr. Martin Luther was a faith cure, though not one of Christian Science, like the beneficial effects of Paul's prescription for Timothy. We have also the visual hallucination of the cross in the sky and the historic motto which inspired Constantine and the crusaders.

Mohammedism, founded in the psychic trance and alternative automatism of an epileptic, is said to have been the only one of the world's great religions which has made inroads upon and resisted Christianity. But the delusion founded faith of Mormonism has done and is doing likewise, though cerebral disease has not been so clearly traced to the founder of the latter.

Religious reasoning mania of the older writers, not yet discarded from the nomenclature of psychiatry or paranoia, is a familiar theme in the history of the past and present psychology too well known to intelligent alienists to require recapitulation, especially before such an audience as this.

Religious paranoia is the more recent term, but not always the better, meaning the same condition of mind.

Briere de Boismont in his "Rational History of Hallucinations," Wm. W. Ireland in his "Blot upon the Brain," "Through the Ivory Gate," etc., Clarke's "Study of Pseudopia," Forbes Winslow's "Obscure Diseases of the Brain and Mind," Equirrol, Meyer's "Hallucinations," Dendy's Philosophy of Mystery, "The Convulsionaires of the Middle Ages," Abercrombie and hosts of others in our libraries may serve to refresh our memories.

Among the hallucinations of great men in political spheres I may here mention in passing the Guiding Star of Napoleon Bonaparte and the radiant child of Lord Castlereagh.

Though religious delusions have prevailed almost from

time immemorial, America is contributing more than her share just now to the "Christopathia" and "Bibliopathia" of Scriptural pseudopia. From the Freeman horror of Pohasset to the most recent sacrifice of a little child offered to God and slain by parental hand under the morbid impulse of disease perverted interpretation of the Bible. God did not stay the hand of these bible distorting fanatics, as He does those of the modern Christian Scientists, though He did that of the trusting Abraham of old, who like Noah, and unlike these modern Christopaths, "walked with God."

Freeman was a second adventist letter carrier of American birth. Dykastra, who on the nineteenth of April, 1899, cut his child's head off with a corn cutter because God told him to do so was a native Hollander, resident of South Holland, Illinois. How many a little trusting heart like that of Freeman's child and how many like that of Dykastra's fleeing offspring, would, if they could, get away from the benign influence of this modern Christian Science sacrifice which, under the blinded view of religious liberty, states and courts are tolerating. The states and courts should protect these innocents and not foster murder through disease perverted misapplication of the Scriptures. It is our duty as alienists and neurologists familiar with the vagaries of the mind and nerve centers morbidly perverted, to move against and stop, if we can, this murder of the innocent victims of disease inspired Scripture misconstruction.

Faith and a sort of Christian Science healing are common among certain tribes of American Indians, while superstition and contortion cures, are almost universal among them. Tenskwatawa, a prophet of the Shano tribe bearing a revelation from the Master of Life "declared that he had been taken up to the spirit world where he had received power to cure all diseases and lift the hand of death in sickness or on the battle field, and Kanakuk the Kikapoo had seen the Great Spirit who commanded him to tell the people not to steal or tell lies, not to murder, not to quarrel and to burn their medicine bags, if they did not they would go the crooked path of the bad." (*Yaveh and Manitou in Monist*, April, 1899, pp 404-405).

The following clinical record illustrates a common form of Christopathy because it is one of hallucination without the usually subsequent delusion. When most persons have become damaged in their higher nerve centers to the extent of having false perceptions, false or erroneous conceptions are almost sure to follow. To see Christ in morbid vision is usually to be called of Christ to fill a mission to the world and Christopathic paranoia is developed, but this case stopped short of delusion:

CHRISTOPATHIC HALLUCINATION OF THE CRUCIFIXION
—FROM CASE RECORDS OF DRs. C. H. AND MARC
RAY HUGHES, ST. LOUIS.

Mrs. ———, grass widow, menstrually regular, aged 32, of Scotch birth, twelve years in the United States, had grippé five years ago and has had two miscarriages subsequently. She lived unhappily with her husband, his occupation being unlawful and repulsive to her. She left her husband after he had threatened her with great violence. Shortly after this she heard the sermon on the mount, having previously suffered from nervousness and insomnia. Immediately after hearing this sermon the hallucination of the Savior and the Crucifixion, the Savior in the Sepulchre and the Resurrection appearing to her in succession, with the most painful vividness. She saw Him nailed to the cross, the bleeding feet and hands, the agonizing look, and heard the low despairing cry. She saw Him laid out for burial and saw His ascension. These appearances recurred to her from day to day and come now but less vividly, only however as hallucinations. No delusive acquiescent involvement of the intellect has developed with the pseudopia. She seeks medical relief and not the following of a miraculous mission. She is consequently not deluded, but only hallucinated. The evolution of this hallucination is plain enough. A brain over-strained, its arteriole circulation quickened, its psychic neurons morbidly impressed so that perception is intensified. The sermon on the mount quickens and gives shape to the exalted perception. Its

impress remains, but it does not reach the morbid involvement of the reasoning faculties.

Her ancestral history being free from psychopathic taint, she is spared from the development of reasoning Christopathy or Christopathic paranoia and the community is saved from at least one more of these pitiable paranoiacs we see of late so often among the so-called Christian Scientists, while the world is spared the infliction of another Christopathic founder of a misleading sect in a new theology. She does not take her place among the theologic perverts, because the morbid action stops this side of the ideational centers of the brain. The reasoning neurons of the cortex escape the morbid perceptual perversion and she seeks the alienist and neurologist rather than converts among impressionable people.

Under judicious medication and advice, this woman has markedly improved. She is not now emotionally affected as formerly by the faintly returning vision and is engaged in regular daily occupation. All her bodily functions are being normally performed. She eats well, sleeps better, has regained flesh and all appearances prognosticate perfect recovery.

Among primitive peoples, superstition is paramount. We see it by historic light prevailing in remote antiquity as it does now among the Indians of North America, the heathen, the uncivilized and the semi-civilized. As civilization advances, science intrudes and explains away much of the mysterious in nature. As the evolution of the mind goes onward and upward, reason dissipates the myths of mind in the healthy. But when the evolution of disease weakens the brain and mind in their powers, we see again the once strong brain that had discarded ancestral superstitions, accepting them again and becoming dominated by delusion. Not all the mental decadence is found within the walls of the hospitals for the insane. Psychopathic degeneracy pervades the ranks of the over brain-strained, and if, at opportune moment of mental weakness, a fad like that of Christian Science obtrudes, it is accepted by those whose normal inhibitions are weakened, whose psychic

neurons are exhausted as a verity, and sometimes strenuously defended with all the vehemence and disordered enthusiasm of maniacal delirium.

Under such delusive states of mind anything may be accepted as truth. Under it a man in Mt. Vernon, Ohio, believed that his wife's dropsy came from sin and called in a Christian Science healer, but the load of original sin was too great for the powers of the excisor and the woman died.

In another instance, a Christian Scientist, Miss Harriet O. Evans of Ohio, treated a printer named McDowell for typhoid fever. Miss Evans prayed, McDowell died, the state medical board arrested her, a police court rebuked and fined her, but a higher court reversed the lower court and the case went to the supreme court, which has not as yet rendered a decision.

Under the delusion of the sin origin of all disease a race horse was lately healed. The healer assaulted the master's sin with prayer. The horse got well and won six thousand dollars.

On June 16th, in the Elgin Insane Asylum, Mrs. Ellen L. Gillson died. Her insanity came from Christian Science or came on with it. Her daughter Gertrude and her brother Elmer E. Day, lost their reason from the same cause or in the same way. Day was a druggist and enjoined his patrons to substitute Christian Science for drugs. Three in one family, all deranged within a few weeks under one Christian Science teacher.

A man gets a broken thigh bone set by a surgeon. The bone unites, but it has the usual shortening. A peripatetic Christian Science healer who combines a book agency with her practice is consulted. "The same power that mended the leg," she reasons, "can restore its natural length." She gives a present treatment and having to go away, promises absent treatments till the leg is restored. After taking her departure the leg begins to grow, the man watches with joyous interest the limb lengthen from day to day, when Oh! happiness it is as long as the sound leg, but lo; it keeps on growing and the healer can

not be found. Anxious inquiries are made while the faithful, fearful patient contemplates a prospective unlooked for deformity. At last accounts the leg was still growing. Faith had made the crank a cripple again, for the recreant healer had gone away and into another business and forgotten him.

Trance states and auto-suggestion, the automatic psychic activity evolving the work of subliminal consciousness in the individual, as in hypnotic and "spirit" seances, make much mischief with persons not rationally circumspect of the non-volitional or semi-volitional operations of their minds. The health of the mind in its daily movements should be watched and cared for as well as the hygiene of the body. A personal psychic as well as a personal physical sanitation is essential in these days of brain strain and strange phenomenal revelations of mind, to maintain normal mental integrity.

The mental machine and its force display, require circumspection and regulation as well as the mechanical mechanisms under man's control. If we should allow the dynamo and the steam engine to run without control or the locomotive or trolley car to run wild, we should have catastrophes enough for our neglect, but certain people either originally badly endowed in normal power of control in the inhibitory centers of the brain, or badly influenced by environment, let their brains run away with them and lead them into the wildest vagaries of mental aberration and explosion. The brain is a machine, to be governed by the laws of its normal life and action, liable to accident and wrong action like other, though less delicate mechanisms. We should not neglect to control the delicate machinery of the mind and keep it within the normal channels of thought and action, and as psychologists familiar with the wreck and ruin of mind, we cannot refrain from sounding proper note of warning. Much of the misery of the world is due to the mind going wrong, without, as well as within hospitals for the insane. The lunatic within an asylum is harmless to the world. It is the mental pervert without, not far enough gone wrong to suggest the need of restraint, who is making a world of mischief for mankind, procreating

hordes of psychically dangerous psychopaths and flooding the community with psychopathic ideas whose contagion should be quarantined against as much as any physical plague.

The evolution of a Christopath is plain enough to the student of psychology. A brain strained by the trials of life or disease or both, to the verge of brain break and unstable psychical display, seeks relief in the study of the Holy Scriptures. The anxious search brings the unrest of the psychic neurone and dendrite over action and reveals whatever inherent instability there may be of psycho-neural nerve element. Insomnia and neurasthenia and cerebrasthenia hasten the fatal denouement and the Christopath is evolved. The soul calming, hope inspiring promises of the bible are interpreted by psychopathic vision, in revelations of paretic grandeur or in pathetic pictures of melancholic depression. The soul is lost beyond all hope of redemption or saved beyond all previous conception or Scripture warrant of heavenly glory, or, as in the case of the Christian Scientist, the body is translated beyond the reach of the body's laws, its diseases are dissipated and pains are gone, under the dominant delusion that all disease is evil and driven away by the power of Christ who is now engaged in the constant practice of medicine. Though nature teaches the truth ever so plainly, that disease, decay and death are the order of nature in the sinless animals, plants and rocks, the Christopath with morbid vision sees sin where rational beings see an inexorable law of nature; they see only sin as the cause of disease in man.

Because the Scripture saith, "The soul that sinneth, it shall die;" they see the body too, sicken and die only because of sin. Insane delusion is a wrong conclusion brought about by a morbid state of brain from which the mind cannot be turned by right reason. This is the state of the original Christopathic Christian Scientists. Of those who follow them, some are led by imitation and misinterpretation of evidence, but all have gone wrong on the evidence, whether they are mentally rational or irrational.

A weary mother, worn with child-births, domestic cares,

and maternal solicitude, etc., at the end of a decade of matrimonial life which she dreamed in her girlhood would be one of unalloyed felicity, discovers one day that she has an abdominal tumor. The too rude medical announcement advised that it should be removed at once as her only hope. Pessimistic prognostications greet her from quasi medical advisors among female friends. She feels that she will die of the operation but reaches the despairing conviction that she must die anyhow. In the midst of this gloom, a suggestion of hope comes. She has no tumor. Disease is not reality. It is only sin—a delusive conception of mortal mind. "The mortal body and all of its diseases are evolved from mortal mind." This diseased impression originating in the unconscious mortal mind and becoming at length a conscious belief that the body or matter will dissipate and disappear under the microscope of "spirit," her suffering is belief without an adequate cause" which the Infinite Spirit will drive away. "It is the faith of mortal mind that changes its own self-inflicted suffering and produces a new effect on the body." "Look up to the Great Physician and be healed." This is the help she has been looking for, the surgeon she needs. She looks up, and lo, she is healed; at least she thinks she is. She feels herself a new woman. The burden has fallen. Hope has supplanted despair and the Christian consciousness that the everlasting Arms are under her has come to her. The optimism of faith in God has come to her. She is strengthened by the Christian faith and where the ordinary Christian, under such circumstances with faith and resignation casts her burden upon the Lord, reconciled to His will, the Christian Scientist adds delusion to her religious transformation and faith. The Christian believer says, "Thy will be done," and realizes the security of trusting confidence, that all will be for the best. The Christian Scientist adds more to Christian faith than the Warrant of Holy Writ. But the psychic change is wrought for the better of the patient. The mental and nervous depression and the symptoms dependent thereon are not necessarily caused by the tumor.

The prominent unnecessary symptoms have passed

away and she feels, as we have seen other and naturally more hopeful natures feel under the same circumstances, as we have seen good Christians and even courageous and good nerve-toned agnostics feel when bravely facing the inevitable in disease. The great Grant at Elberon and Napoleon at St. Helena for example. I have seen a woman aged seventy-seven die of another disease, who had gone through life with a cystic ovarian tumor, resisting repeated importunities to have it operated upon and unaffected by the grave medical prognostications. But to a woman, ordinarily, the announcement of the existence of a tumor in her abdomen brings terror and despair and a distressed train of nerve depressing symptoms. Yet a fibroid tumor is more inconvenient than hurtful to life and may neither shorten nor harm existence. When these announcements are made to women, their nervous systems should be considered. The fact should be gently and truly stated and not overdrawn as to prognosis. The surgeon, eager to operate and accustomed to the knife as his only remedial resource, is not always so good a person to break the disheartening news as the otherwise resourceful practitioner, with a good deal of neurological and psychological knowledge of woman in his repertoire of remedial resource.

The psychological make up, nerve tone resistance and psychiatric impressibility of patients should be more considered, any way by surgeons. The best possible phase compatible with truth should be put upon surgical disease and operative results. All formidable features of preparation and prognosis should be kept from the knowledge of the patient. The truth should be gently told, the chances of recovery embellished a little and instances of similar recoveries therefrom should be detailed in such a way as to establish hope in the patient and this hope should be maintained by individuals and all environments about her. A buoyant psycho-therapy should be adopted and encouraged to the end. It is the buoyant psycho-therapy of Christian Science which explains its marvelously appearing cures in spite of its often neglect of proper hygiene, and always neglect of ordinary medication, though it uses unconsciously one of the

highest resources of psychological medicine, *viz*: psychic support and psychic exaltation. That hope which "springs eternal in the human breast" should never be taken entirely away in prognostication or in our treatment. It is the power of Christian Science.

Though the natural man never is, but is always to be blessed, the Christian Scientist is blessed already here and now with the conviction of cure, more often delusive, but sometimes real. We would not interfere with that delusion, were ignorance always bliss and folly from ignorance always wisdom, but the innocent dead in the track of this monster delusion tell of its fatal error.

The Christian Science craze is fast becoming an epidemic delusion. Even the courts have decided in its favor as a verity of healing entitled to legal protection, as they decided in Cotton Mather's days against witchcraft and committed crimes of judicial murder in the name of the Law.

The followers of Mrs. Eddy claim that she was as much inspired as Jesus Christ and that there are over a million of her followers in the United States. It is claimed that there are seven Christian Science churches in New York City, thirteen more in the immediate vicinity of the metropolis, thirty-eight more churches in the state of New York, about thirty thousand adherents of the faith in the state and one hundred and twenty practitioners in that city.

Flourishing churches are also organized in London, Paris, France, Dresden and Hanover, Germany, and in Canada, Brazil and Scotland. The mother church of Christian Science, having over twelve thousand members, is in Boston, Mass. All others are its branches. These churches are emphatically healing churches. I have witnessed the crippled walking, carrying away their crutches, and those deaf, some over thirty years, hearing. I have been the means of healing many such, some over forty years standing. Says Mr. Eddy: Christian Science is applied Christianity. Through the spiritual understanding of the teachings of Christ Jesus, its followers are enabled to obey His commands to "heal the sick" and to do the work He and His

disciples did. It is not faith cure, because it does not perform wonderful works through a blind faith in a personal God, but through the understanding of man's relation to and indissoluble oneness with God. It is not mesmerism nor hypnotism, because it is absolutely the power of the human will and mind and claims no will but God's.

It is the perfect salvation from sin and sorrow, disease and death, which Jesus Christ came to bring. Christian Science, in a word, is the Law of God put into practice here and now." (Rev. George Tomkins, D. D. C. S., lecture Buffalo Music Hall at Scranton, Pa., Dec. 6th, 1898).

"The revelation of Christian Science, the same Christopath exclaims, came to Rev. Mary Baker Eddy in the year 1866 and its truth and power were immediately demonstrated by signs following. For thirty-two years sinners have been reclaimed, depraved appetites for opium and intoxicating drinks have been destroyed, the sick have been healed of every imaginable disease, including insanity; the blind have received sight, the deaf hearing, shortened limbs have been elongated, crooked spines have been straightened, and law after law of human mind's bondage been broken."

Some of these asserted cures do undoubtedly take place, not all of them nor a tithe of them, but some. The delusion is in the explanation and belief that such cures as follow are the result of Divine power and not of natural causes. The mental exaltation and strong influence of psychic suggestion are ignored, only miraculous explanation is invoked. The powerful tonic of hope, faith, confidence, expectant attention, psychic and hypnotic suggestion, play no part—only God and the healer of sin—as the Christian Scientist interprets these things. Animals, wild as well as domesticated, sicken and die without sin, but man's ills all proceed from sin. Nature exhausts the brain and body even of a Christian Scientist, as it exhausted the stomach of the apostle Timothy, giving him nervous dyspepsia, and the Christian Science healer and teacher must himself or herself obey the law of nature and rest and eat and sleep, or the brain breaks, and it is the ignoring of nature in rela-

tion to the organism that drives so many Christian Science enthusiasts into insanity and develops the train of lesser disorders in them. It is a brain weakening and mind destroying fad. It has not yet cured as many people as Perkins' wonderful metallic tractors now forgotten and powerless.

It is not necessary to assail any one's faith or to deny the possibility of general or special Providence, (for God's providence is plain in the law of nature), to say that Christian Science healing, so called, as practiced by its present votaries is a gigantic delusion. It refuses to discern nature and nature's law in man or recognize man's true relation to God and Nature in relation to man's diseases. The attitude of the Christian Scientist is inconsistent. The parable of the lilies of the field might as well be taken to mean that man should neither toil nor spin, nor employ a tailor as that the New Testament should be construed to dispense with a physician in sickness. If Christian Scientists lived literally as that parable allegorically enjoined, these deluded creatures would all be naked corpses.

With us, as psychologists, there is a psychologic as well as pathologic view of reason and delusion. We need neither deny nor affirm that Jesus meant the power of miracle to fade with the lapse of years or to vanish at the end of the third century, as the question is put to the medical profession by the votaries of the new healing business. We know that cures follow faith and exaltation, and buoyancy and hopeful expectancy under our own ministrations, with or without the aid of medicines, in spite sometimes, perhaps, of the wrong medicine and a mistaken diagnosis. We have seen the successes, but we have seen likewise more of the failures of this new sect. Cures that appear miraculous to the physiologically and the therapeutically ignorant are not marvelous to enlightened medical observation. Given sufficient integrity to the psychic centers for vigorous, hopeful, mental impression and we know the value of a favorable prognosis and of faith therein.

A patient, confident of recovery, may get well from the same disease that would kill a profoundly hopeless one even

under good treatment. We do not attribute either the recovery or the fatal issue to God. They say reasoning is the reasoning of delusion and superstition. They say the sick are to be healed but drugs are to be ignored. Thirst is to be quenched, but the cup of cold water, which the Master enjoined, is not to be given. When the sick are to be healed physic must be thrown to the dogs. "In Christian Science the less there is of personality the more there is of healing power," say these healers. "The power is God and the change is wrought by none other than the Infinite mind." Then why preach to impress the personality. Why do anything? If God will do all, then why do anything? Why nurse or care for the sick if He alone is to care and cure? Why talk, why discuss, why do anything? Here is the delusion. "Matter is unreal, disease is unnatural, death is error." How about plant life, lower animal life, the life in the earth, in the sea, in the air? Here is the delusion. God endows a human being with an impenetrable and sensory nervous system, supplies nature with anodynes, and man with a mind to understand and minister them, but when a man is in pain he must ignore the physician and the remedy, and cast his burden of pain on the Lord. Why does the Christian Science healer accept a salary? "The Lord will provide." Here again is the delusive misinterpretation of Scripture. If Christian Science is not a delusion then all human life should be without effort. Why confine inaction to medical treatment only? Why preach, why exhort, why practice, why take money for treatment, why hold the thought, why build churches, why print books, magazines, newspapers? Why found societies? These are natural agencies that impress as much as medicines. If Christian Science is not the product of a Christopathetic psychical exaltation then there is no truth in psychological science. For nature and her laws, human nature and its psychical and physical laws and the Author of nature are in harmony. How much more rational are these Christian Scientists, these holdings of the thought that only God is real and disease unreal, these delusive terms and silent incantations, than those of the poor Indian who "sees God in

the clouds or hears him in the Wind," who invokes Him in weird dance and medicinal incantation, or in the religious snake dance of the Arizona Mokis or Hopis or the ghost dance of the Wovokas.

A glance at the Lord's Prayer as it is treated by Christian Scientists in their formal worship has a familiar appearance to psychiatrists in its commingling of reasonable and unreasonable, the psychically concordant and the psychically discordant in efforts at worship. No other than the Lord's Prayer is used by them audibly. Prayer by ordinary Christian method is discarded by them and their churches have no pastors in the ordinary sense.

The pastor is called a reader and he may deliver a discourse or only read from the scripture. Another reader or the congregation responds from Mrs. Eddy's book which many regard as equally sacred with the bible and pay a high price for it, as much as five or six dollars.

Here is the Lord's Prayer and the Christian Science interpolations from the Eddy book as presented by two readers in public worship.

Our Father, Who art in heaven,
Our Father and Mother God, all harmonious,
Hallowed be Thy name,
Adorable One,
Thy kingdom come;
Thy kingdom is come; good is ever present and
omnipotent.
And forgive us our debts as we forgive our debt-
ors,
And divine love is reflected in love,
And lead us not into temptation, but deliver us
from evil.
And lead us not into temptation, but deliver us
from evil, sin, disease and death.

A Christian Science worship concludes with the following delusional Berkleyian formula of belief, the crazy creed of this insane sect, which the founder calls a "Scientific Statement".

"There is no life, truth or intelligence or substance in matter. All is Infinite mind and its infinite manifestations, for God is all in all. Spirit is immortal truth; matter is the mortal error. Spirit is the

real and eternal; matter is the unreal and temporal. Spirit is God, and man in His image and likeness; hence, man is spiritual and not material."

An examination of the revelations of these Christian Scientists contained in Mrs. Eddy's remarkable book, reveals, according to good biblical critics, evidence of ignorance of the meaning of the words the author uses, ignorance of the original tongues of the Scriptures, illusory, hallucinatory and delusional perceptions and conceptions of God, without bible warrant; ignorance of biblical history, manners, customs and meanings. Her interpretations are no more Scriptural nor common-sense, than we are accustomed to see among bibliopaths in the corridors of the insane hospitals. A well-known city Divine, Rev. W. W. Boyd, says of the new bible of the Christian Scientists—

"No honest student of the Bible can be deceived by its claims. It can only attract and delude such as have but a superficial knowledge of the Scriptures. Those who know the Bible and are wont to interpret it by the canons of common sense, cannot give assent for a moment to the religious tenets of Christian Science."

We entirely agree with the same Divine that "the great weakness and danger of Christian Science is in its unwarrantable use of the bible." Such unwarrantable use of the bible not only imperils true religion before the discriminating, but it imperils the integrity of blind believers mislead into erroneous and false conceptions of bible truth. It impresses the miraculous and unnatural constantly on human life beyond all Scriptural warrant. The deluded followers of the insane faith are in a delusive transport, no longer of the earth earthy, but spiritual and heavenly, living in the atmosphere of the unreal and removed, in imagination, from the ordinary law and necessity of life and health. They do not eat angel food but they believe only in such medication as would cure angels. The Christian church has already suffered too much from the delusional lives of many of the votaries of Christianity.

A little farther advanced in delusion we may see their counterparts in all the asylums for the insane, believing unto death, that food is not a necessity, and that raiment

is useless for their transformed and spiritualized bodies, lifted by delusions above and beyond the material realities of this life, where heat burns, cold freezes, hunger starves, living in the realms of the insane unreal, but fortunately cared for by minds yet enthroned with right reason and belonging to mortality.

It is the duty of psychological science to point out popular, as it is to heal, morbid delusions and to show wherein and how often popular delusions have their foundation and origin in morbid states of the brain. This new chimera of supernatural healing will go the way of its predecessors, into desuetude.

From time to time in the psychology of communities, the marvelous, starting from a disease touched brain, comes abroad and flourishes in popular favor. Prophets will arise now in medicine and science as in the past they have arisen and passed away in religion, astronomy and politics. The struggle between chimera and truth is always to the death and superstition dies. Credulity cannot confront truth and live on. Error and superstition appear only in the kaleidoscope of changing time. The years of eternity are Truth's.

AN EXHORTATION AND A PRESCRIPTION.

Mother Eddy sent a letter to the convocation of Christian Scientists recently held in Boston, in which, among many similar sentences, was the following gem:

"O, how is man, seen through the lens of spirit, enlarged, and how counterpoised his origin from dust, and how he presses to his original, never severed from spirit."

Whether *post hoc* or *propter hoc*, we cannot say, but just then a case of sunstroke occurred. The Christian Science prescription was, literally, "to-wit:"

"The simple knowledge that the creative energy of the universe is sufficient to make you well, must be held in thought."

ADDENDUM.

CHRISTIAN SCIENCE AND SPOONS.

The following is from the editorial pages of a recent number of the *Christian Science Monthly*:

"Christian Science Spoons—On each of these most beautiful spoons is a motto in bas-relief that every person

on earth needs to hold in thought. Mother requests that Christian Scientists shall not ask to be informed what this motto is, but each Scientist shall purchase at least one spoon, and those who can afford it, one dozen spoons, that their families may read this motto at every meal and their guests be made partakers of its simple truth.

"MARY BAKER G. EDDY."

And there are thousands, they say hundreds of thousands, of people who are enthusiastic adherents of this sorry mixture of ignorance, delusion, and cunning. And the Americans are called shrewd and quick-witted! The query as to the truth of the diagnosis suggests another as to the occurrence of a great psychologic change in our character.
—*Philadelphia Medical Journal.*

THE LEGAL DISABILITIES OF NATURAL CHILDREN JUSTIFIED BIOLOGICALLY AND HISTORICALLY.*

By E. C. SPITZKA, M. D., New York.

(Continued from April, 1899.)

The "Grande Monarque" and his successor set examples which the petty princes of neighboring states were as quick to follow as had been Monseigneur and Marquis at home. Most of their Liliputian domains boasted an imitation Versailles and *parc aux cerfs*. This had been an unfaithful copy, had it not been stocked with game "of every shade." Foci of bastardization thus dotted the land so closely as to approach the confluent, and new sources of revenue must needs be, and unprecedented ones were discovered, to support these institutions of patriarchal, if not paternal government. The stipends granted by England in consideration of the loaned cargoes of food for the powder of "76", consigned as Hessian, Brunswick, Anspach and other mercenaries, went largely to support the bantlings of more than one duke and of two electors; one of these had no less than a hundred to feed! It was within the means of these princes to copy the architecture and garden, the costumes, menus and etiquette of their Bourbon ideals; but, granting it had been their will, it was not always in their power to prevent the copies from degenerating in faithful imitation of their models, and, in one instance at least, from reproducing the most shameful features of the original. If the *Dragonades* of the Cevennes, the broken heart of Vauban, the humiliation of Racine, the exile of DuQuesne and others of the best brain and blood of France were due to the bigoted adventuress who wielded

*All Tables to be found at end of article.

despotic power over its king, through having been the governess to his natural children, no less was the startling reproduction of mediaeval despotic *camarillas* in the Bavaria of last century, due to an intrigant fanatic;⁵¹ whose power had its source in the studied sycophant interest he affected for Charles Theodore's natural children.

The objects of a paternal interest so intense, so general and often so strangely manifested, are not the beings, whose helplessness might justify the exaggerated solicitude shown them. They commonly possess more than the average share of the faculty which ensures care of self. Be it through moral or wilful deafness to those behests of Law, which restrict within reasonably fair bounds the civilized strugglers in the contest for existence, the bastard, keenly sensitive to emergencies, intensely appreciative of momentary opportunity and above all, robustly selfish, inclines to depart from the conventional and slow into more opportune and shorter paths. Competition he may overcome by a radical and effective, howbeit irregular method, removing it altogether by destroying the competitor; one perhaps like Edgar in Lear:

“* * * * * a brother noble”
 “Whose nature is so far from doing harms”
 “That he suspects none; on whose foolish honesty”
 “My practices ride easy! I see the business”
 “Let me, if not by birth, have lands by wit”
 “All with me's meet, that I can fashion fit.”

It is rapacious ambition, leading to spurious claims, that accounts for the enormous proportion in eighty-four homicides among four hundred bastards of thirty-two (including sixteen fratricides) who had murdered relatives of the first degrees of consanguinity; that is thirty-eight per cent (Table I). Whether it were one *nothus* who, like Gideon's, found seventy(!) legitimate brethren in his way, or seventeen bastards, who wistfully regarded Artaxerxes throne out of which they were kept by the single legitimate heir, the *filius mulius* was equal to the occasion; witness the sixty-nine victims of fratricide Abimelech and the murder of Xerxes the Second, inaugural of a chain of assassinations and executions of brother by brother continued in the death

of his murderer, bastard Sogdianus, at the instance of Darius nothus, and the killing later on of brother nothus Arsites. Need I more than refer to the historically famous victims of fratricide bastards from Remus of Legend and Amnon of Scripture, to Roman Geta, Macedonian Demetrius, Pedro of Castile and Juan of Gandia?

It is true that like tragedies frequently occurred in ruling families, committed by princes of legitimate birth, as well as by their illegitimate half brethren. But while, in the former case, the crime has been sometimes punished by the unfortunate father common to victim and assassin, yet although the deed is proportionately much more frequently a bastard's, I fail to find one instance where paternal partiality had become sufficiently neutralized by grief for the slain and resentment at the offender to ensure the latter's adequate punishment. Many princes, who had not been guilty of so grave or indeed of any serious misdeeds, have been executed or assassinated by command of suspicious, deluded or cruel royal fathers.⁶² But only one instance can I find, where a bastard son was the victim: It is that of a paramour of his father's second wife, the Parisina of Byron. So bitter was paternal remorse however, that it sought relief in expiatory sacrifices—as usual with princes—of others; for Nicolo of Este caused all guilty of adultery to mount Ferrara's scaffold, since he had made his beloved Ugo die for that crime.⁶³

Alone as this case stands in that Court-Almanac: History, as isolated is the like in that chronicle of humbler life: "The Newgate Calendar." Its single record shows that the mental state of the murderer, one Sheen, merited investigation. In addition to this feature, it illustrates the strange utility of strict construction of the "Letter of the Law" in providing a loop-hole for escape, where the most meritorious plea of Mental Science would, if it had not fastened the rope around the murderer's neck more quickly and surely, have been at best "laughed out of court." The parochial officers on learning who the father of the bantling was, induced him to marry its mother by a present of five pounds sterling. Sheen manifested an unaccountable

antipathy to his infant. When it was presented to him, he turned away in disgust or in passion, repeatedly struck it and eventually he deliberately cut its throat. The child having been baptized William *Beadle* Sheen, its god-father and procurer of the marriage had unwittingly thus saved the murderer's life, for the indictment was drawn against the murderer of William Sheen (the father's name also) and therefore dismissed. On a second trial, the indictment having been correctly drawn, proceedings were definitely squashed on entry of the plea, *autre fois acquit*. The liberated murderer continued to reside at the scene of his crime, and repeatedly came before the magistrates upon allegations of riot and intoxication.

Among the agricultural classes, where this crime is sometimes committed by the father of a natural child, rare as it is, his part usually extends no further than abetting it. The instigator is in ninety-nine of a hundred cases the mother, and her accessory is often driven to do his part by threats of exposure or by some other imperative motive.

Whatever the foundation of a fatherly feeling, to which so few exceptions are found, Law can see in it only an inimical force, against whose encroachments constant vigilance and strict adherence to apparently harsh but wisdom-founded edicts are necessary. Often when the legislative chamber has been entered by law-makers who, as procreators of natural children were at the same time law-breakers, the barrier against law-breaking like their own has been undermined through special legislation, then breached by establishing vicious precedents, and finally borne down by a turbulent sea of crime and confusion, which thenceforth covered the domain of what had before been Law and Order.

So far am I from picturing thus on abstract assumption, that wishing to illustrate by what has been realized in the concrete I am at a loss—not for an example—but from the history of which nation, and from which several epochs in the history of the same nation, to select. One where the developing encroachment and consummation occurred with impressive rapidity, is that

of Rome from the later mediaeval, down to the later part of the renascent period. The social and domestic life of the faction leaders—self-styled “nobili”—had become more thoroughly permeated with profligacy at this latter time than it had been—and sufficiently so—before. The laws of the *Rota Romana* became more and more relaxed in enforcement, and eventually the code in its parchments sanctioned the anticipating practice. One of the first codified departures was from the law, which treated the bastard, in the strict sense of the word, as *filius nullius*, and denied him succession to any and all estate on the paternal side. The new law while emphasizing the *nothus'* exclusion from inheritance of his father, allowed him to inherit from his brother: *Successio non degenerator natis ex damnato coitu, quando non agitur de succedendo patri sed fratri.* I leave it to our legal friends to decide: how long would it take to capture the citadel of the paternal estate by the round about path of assault thus laid bare? The problem how one can be the brother, by common paternity, of the son of one who is not one's father, is not to be solved even with the assistance of the Seleucid and Ptolemaic family trees; although these present combinations, which fully realized, what is in the power of the most fertile fancy to imagine.

The chief changes were, however, made in local ordinances. The promulgators of these, gaining confidence from decade to decade of progressing demoralization, did not content themselves with merely relieving the disabilities of their favorites; they made privileged persons of them. The lives of legitimate citizens, not of noble birth (there were a few) were at the mercy of any nobleman's adventurous bastards, and for a reasonable consideration. An ordinance of 1580 decreed, that immunity for the crime of murder could be secured by a baron or his *bastard* (the latter is specifically designated!) on the payment of one thousand pounds (at 20 soldi each); by a knight or his “canaleretto” for four hundred. It so happened, that in the same year which witnessed the murder by a nobleman of his two daughters and his obtaining immunity at the price of eight hundred ducats, the bastard Franches-

etto Cibo, who practically governed Rome through his father, secured the issue of a decree ordering the treasurer to deliver to him all such fines as were in excess of one hundred and fifty ducats—the blood moneys below that limit, were permitted to go to the treasury. Thus was prepared the soil on which the loathsome parasitical growth of Borgias, Medicis, Roveres, Farneses and Riarios flourished; then occurred excesses of the lower orders, recalling Sabine raid and Marian tumult; and among the higher, orgies and crimes which Elagabal and Commodus might have emulated. The unloosening of all ties of fealty and honor, the substitution of Borgia powders and bravo daggers for statesmanship and warrior bravery, were local outcomes of this condition. It went further; Macchiavelli's syllabus, inspired by bastard models and favored by bastard patrons, carried the plague across the Alps to poison the mind of the monarch who ordered the fatal tocsin sounded on St. Bartholomew's day. We can trace another transalpine-borne virus to Brinvilliers and her coterie, a gift of the Borgias. The perambulating professor of their art, countryman of Macchiavel and of a manufacturer of another venom in pornographic guise, Aretin, bore the suggestive name Exili. In these three, the very Nadir of all that is repugnant to those of clean hands, minds and morals seems to have been reached. No wonder is it, that bastardy in Italy not alone ceased to be a disgrace, but under circumstances became a boast and that even to the end of the last century, such sayings were prevalent as: *Meglio un Gherardini bastardo che un Corsini ben nato!*

The partiality shown natural children in condoning faults and crimes, as well as in carrying generosity to them to the limit of bestowing power, is commonly attributed to the father's desire to make some restitution in repair of the injury done an innocent offspring by the tainture for which the father is responsible. A halo of romance is added by sentimentalists, who affect to see therein a transfer or continuance to the love-child of that affection, which its parents had entertained for each other. Another common view is fairly expressed by an eminent barrister, less known

however as a legal luminary than notorious as the butt of his biographers, though at the same time distinguished as the master biographer of another; Boswell in dissenting from his eidolon Johnson's reprobation⁵⁴ of the "Letters" of "Gentleman Chesterfield" to his (natural) son Stanhope, says: "there was considerable merit in paying so much attention to the improvement of one who was dependent upon his lordship's protection; it has, probably, been exceeded in no instance by the most exemplary parent, and though I can by no means approve of confounding the distinction between lawful and illicit off-spring, which is in effect insulting the civil establishment of our country, to look no higher; I cannot help thinking it laudable to be kindly attentive to those of whose existence we have, in any way been the cause." Had the outpourings of generosity their source in contrite desire to repair a wrong, they were in part directed thither, where restitution is equally if not more imperative, and often much more urgent. But rarely are they allowed to flow in that channel of equity. The neglect and—in notorious instances— inventive contumely, meted out to mothers of natural children, idolized by the seducers of the former, tell a different tale; one showing the studied favoring of such children to be due to naught but an exaggeration of that feature intrinsic to paternal love, which distinguishes it from the maternal, namely: egoism, in vicarious display. The mothers of natural children, on whom titles and revenues were lavished or for whom special principalities had even been established, remain unknown or are dismissed with the barest mention in history; which thus reflects the treatment they experienced in life. There are no Chesterfieldian "Letters by a Gentleman to the Mother of his (natural) Son!" A Chancellor of France was found obsequious enough to insert a clause in a fundamental ordinance of the realm,—or rather of Christendom — which ensured oblivion⁵⁵ for the discarded mother of his master's pampered bantlings.

Many have thought to find a strange inconsistency, at best a foreign graft added to relieve an otherwise uncompromisingly abhorrent character, in the Moor of "Titus

Andronicus." It is where in a burst of fatherly affection, he rescues his *adulterinus* from contemplated slaughter, and later displays solicitude for, and pride in, the off-spring of his and Tamora's miscegenation. However, the great dramatist was as faithful to Nature here as elsewhere; parallel characters lived, and parallel transactions are recorded in the pages of actual history.⁵⁸ Caligula loved one object besides his horses: the *adulterine* Drusilla. Of this daughter who tortured, bit, scratched and tore or broke whatever of the animate or inanimate was in reach, Caligula seeing himself duplicated, thought, as Shakespeare makes the Moor express it:

"My mistress is my mistress; this myself,"
"The vigor and the picture of my youth,"
"This before all the world do I prefer;"
"This maugre all the world will I keep safe,"
"Or some of you shall smoke for it in Rome."

One of the best examples of a nobler kind of this infatuation is that of Franklin, already touched on. Even here the essential character of vicarious egoism is exhibited and happily epitomized by the biographer⁵⁷ who paints Benjamin as to William "at the same time his friend, his intimate and his easy companion." In other, less meritorious than notorious instances, paternal fondness for bastards appear, as a nauseating reflection and re-reflection between the ego of the father and the reincarnation in an *alter ego*, which his vanity despises in the off-spring. It often becomes perverted into callous selfishness if it does not degenerate into almost insane vain glory. It is also combined with "sexual pride"; a factor of masculinity, more integral and influential than is realized when study of character remains exclusively a survey of its expanse and surface outgrowths, ignoring the intricate course and source of their roots. Had Alcibiades therein been less immodestly boastful, Leiotichides would have realized the paternal project and the Athenian race of Timea's seducer, mounted the Spartan throne of Timea's husband; but the father's indiscreet braggadocio furnished Agesilaus⁵⁸ the grounds needed to displace the *adulterinus*. Distinctly and dangerously near tipping were the scales of Marc Antony's

mental balance, when, in defending the endorsement of the procreation of Cleopatra's twin bastards, he alleged the following: "A noble family can maintain itself solely by a large progeny of princely children. He, for example, was descended from Hercules, who had not risked staking his descent upon the offspring of any one female. For neither respecting the laws nor fearing the penalties of Solon concerning illegal impregnation, he had permitted nature's impulse to run its course, thus making him the founder of numerous septs." Consistently with this excursion into the realm of megalomania, Antony named the male of the twins, "Heliōs," and the female, "Selene." One effort more, in the same direction of nebular nomenclature, had designated the parentage of the celestial children and most appositely, in view of the bewildering maze and Tartarus obscurity of Ptolemaic genealogy, Chaos.

Under some circumstances this paternal pride is more reasonable and that is when bastards contrast so favorably with lawful offspring as they do in the records of regal and other prominent families. Placing side by side the names of their illegitimate representatives and of a near and contemporary legitimate one, a glance at the resulting columns seems to prove an overwhelming superiority of the former:

BASTARD REPRESENTATIVE.

1. Arnulf, German-Roman Emperor; the first to defeat the Norsemen; rescued the Pope and carried Rome by assault; uniformly victorious over Slavonic and Scandinavian invaders as over rebellion and faction at home.

2. Austria, Don Juan of Austria, destroyed Solyman's Armada which menaced European civilization, at Lepanto; well-nigh redeemed the Netherlands, though hampered by his brother's inventive stupidity.

3. Berwick, Duke of Fitzjames; victor of Almanza, excellent diplomat and general; founded flourishing families both in Spain and in France.

LEGITIMATE REPRESENTATIVE.

1. Charles the Fat, German-Roman Emperor *de jure* of the same (Carolingian) family as Arnulf; sluggish, mentally incompetent and deposed for that reason.

2. Phillip II of Spain, his brother, sacrificed his Armada in the English channel; lost Spain, the Netherlands.

3. Chevalier St. George, bigot, narrow-minded, unsuccessful claimant and leader; wrecked the rising of 1715; left the degenerate "Pretender" and the Cardinal York in whose persons the legitimate Stuart dynasty ended.

4. Buchan, Francis Stewart of; victor of Beaugé.
5. Charlemagne, Liberator of the Pontiff; conquered the Longbards and Saxons; united well-nigh the extent of the once Roman Empire under one sway.
6. Robert Dudley, *adulterinus* by Lady Sheffield of the notorious Leices-ter; able, learned and left a distin-guished—also bastard—son Charles.
7. Murray, Regent of Scotland, controlled its tumultuous people and factious nobles; through unprece-dented difficulties interposed by reli-gious conflict, foreign complications, his sister's and Cecil Burleigh's in-trigues, he triumphed in the cabine and [at Langside] on the battle-field.
8. Douglass of Liddesdale, excel-lent military leader, successiul against the English.
9. Marshall Saxe; saved the land of his adoption at Fontenoy and Ber-gen-op-Zoom; he inherited the courtly graces, Herculean strength and crea-tive imagination of his father, to which were added the military talents of the Königsmarks; notwithstanding his adherence—more from pride than enthusiasm—to a religious faith practically proscribed in France, he as a stranger gained the nigh royal rank of "Serene Highness," also a higher title to fame by writings which show him to have been a gen-ius of the prophetic order.
4. James King of Scotland, any one from the Third to the Seventh will do!
5. Carimann, his brother, monk-ish, easily led, and intimidated to abandon his rights of succession.
6. "Lord Quondam," so nick-named, an imbecile but legitimate successor to the estate from which Robert was excluded owing to impeached legitimacy.
7. Mary Stuart, his sister, deposed, notwithstanding unusual factors and efforts in her favor, for crimes as shamelessly as stupidly committed; weak and a failure as a woman, she was not more successful as a would-be virago.
8. Douglass the Fat and Douglass "Tineman;" these cognomina tell the tale.
9. August III Elector of Saxony and King of Poland, inherited all the faults, but neither the physical nor the mental gifts of his father; lost the influence of his house in Poland and his armies to Frederick the Great; his mother had been as big-oted a Lutheran, as his father was a renegade one; he paralleled his father in the latter respect as well as in political alliances—changing his religion adversely to his people and, equally *mal-a-propos*, deserting Fred-erick the Great when the latter was in the full tide of victory.

The voice of contemporaries echoed, the event justified, and the verdict of history confirmed the esteem in which his love child of chivalrous promise, Don Juan of Austria, was held by Charles the Fifth. That esteem could not but have become enhanced by his disappointment in legiti-mate Philip, whose being "out of harm's way" at St. Quentin's battle marred joy at its glorious victory. What more natural, than that deceived and betrayed by his wed-lock-born weakling Henry, the pliant tool in foeman hands, Jerusalem's deliverer⁶⁹ should seek consolation in his father-hood to knightly Manfred, faithful Enzio and Antioch-Con-

queror Frederick? Aside from those of royal blood, bastards have been and are regarded by many, the superiors of legitimately born individuals; at least or notably in particular directions. Such view has found expression in popular sayings;⁵⁴ it has the support of countless confirmatory demonstrations in contrasts furnished by historical characters like those mentioned; finally it seems almost a presumption of Biology. The investigations whose fragmentary results I herewith offer,⁶⁰ were begun with anticipations determined by the latter, and became more and more strengthened by the second, until critical analysis caused the original bias to fade. The prevailing view does not appear invalidated regarding the surface features of the bastard nature and particularly its robust vigor. But as regards certain other and most important characters I found, that to attribute such superiority to the factors involved in illegitimate birth, were hasty; to do so exclusively, altogether erroneous. Usually the merits of bastards are, quantitatively considered—regarding the qualitative more anon—relative rather than absolute. Their comparison with kin of the full blood favors them to just that extent to which the former fail to attain the average standard. The thus increased discrepancy brings out such superior features as the nothus possesses in high relief. In the history of royal succession, the legally privileged competitor for fame enters the arena with all the heraldic pomp of the full blood, and the blazonry of legitimacy on the unstained shield, it is true; but he is otherwise so awkwardly trained and wretchedly equipped, that if the ordeal's outcome be at all surprising, it is so, because defeat is not a more uniform result, and a more crushing one. Language fails to adequately express the attitude of royal matchmakers. There have been instances which passive ignorance could not have produced, nor that colossal obstinacy which is pride- and precedent-grown, repeated, unless deliberate invention⁶¹ in studied defiance of the simple laws of breeding, known to their humblest subjects, had been resorted to. If you can imagine a verdant tourist of the Stone Age suggesting the like to some shepherd breeder of primordial cattle, picture also the sequel, which,

in default of a vocabulary sufficiently elaborate to express just indignation, would be that offended herdsman's supplementary remonstrance through the post-nuchal application of the handiest palaeolithic implement, to that foolhardy traveler. What the biologist in the laboratory and statistician in the library systemize, analyze and trace to finite causes, has been long, if crudely, known, through observations accumulated from the day of the hunter to that of the shepherd, and made in field and forest, by lake and stream. But those in high station thought themselves privileged to exert malaprop. ingenuity in creating monstrosities, or as exempt from consequences which so many "terrible examples" should have warned themof. That these, in disregarding the warning, did not do so with impunity, is told in the sad record of royal degeneracy, whose lesson Ireland² summarizes by observing, that while the church had the power to grant dispensation from the consequences of violating Canonical laws it was beyond its power to grant such for violation of the laws of Nature.

The obstacles to attaining distinction were more than half overcome for Don Juan, the bastard son of Charles V, by his foil being such a creature as was Philip the Second. Berwick might for his brilliant career, contrasting with that of the "true eaglet"³ that safely dares the sun," thank the Churchill blood in his veins. His wretched rival had not only not a drop of redeeming admixture to the blood of the paternal "hatchet face," but an increment of the very contrary, from the degenerate house of Modena. When to the sufficiently deteriorating influence of a monotonous series of marital unions limited to the affluent caste, was added the malign and degeneracy provoking one of consanguinity carried to the point of incestuous union, the result could not be otherwise than the procreation of the blase, the abulic, the imbecile or the cripple. On such a background almost any crossing of breed could not but produce a better offspring; worse had been out of realm of possibility, as the stage next beneath the one represented by such as Charles of progenic skull fame, Don Carlos, son of the second Philip, and Bavarian Otto is an alter-

native between a nonviable monstrosity; or Zero, by the merciful dispensation of barrenness. The story of competitors unfolded in such degeneracy telling cognomina as: the "Fat," the "Silly," the "Bald" the "Lazy" and the "Stammerer," makes the success of an Arnulf easy to understand.

Having opened the question of bastard character as to one of its aggressive manifestations, permit me to add the general result of inquiries on this head, before proceeding to their bearing on legislation. I found the available statistics barren of information or defective in necessary details. On the theory that a few cases well studied, promise more than thousands merely glanced at or forced into the Procrustean bed of an arbitrary system, I collected such from general and biographical history as well as from law records and reminiscences of contemporaries. The fact soon forced itself on my attention that bastardy presents as many grades and as marked contrasts as wedlock procreation. The offspring of a *marriage de convenience* and of a union of affection differ; as much do those of certain classes of bastards differ from each other. I have therefore divided them into two groups, one containing three "benign" classes: A, composed of the children born in morganatic wedlock or so-called marriage by the left hand, with these I have included "mantle-children" and the offspring of surreptitious and stolen marriages; B, includes love-children, of which class, Erasmus, of Rotterdam, Pomponius, Manfred of Tarent and d'Alembert are types; C, comprises those born in open concubinage, *quasi* marriage "without the ring;" to this class belong, for example, Guy of Flanders, the Baryatinska, Duke of Grafton, Charles Martel, Lord Lovat's son Frazer, Smithson, Vertus, Douglas of Morton, John Corvinus, Margaret of Parma, Padella, Arsames, Mastanabal and Ferrand of Aragon. The other or Group II comprises classes in which the affection of the parents was more ignoble or less enduring, the mother frivolous, vulgar, meretricious, or, worst of all, added the guilt of marital infidelity to the common one of illicit procreation.

For reasons which will appear, I have in some tables discriminated between those natural children whose parents had been, one or both, themselves of illegitimate birth, or who procreated their like in turn, from those whose parents were of legitimate birth and those who are not known to have so procreated. Largely represented as are aggressive and serious crimes among the illegitimately born of the series, they are still more so among those who were bastards in a second generation, having had parents one or both themselves born out of wedlock. The figures are also higher amongst those who were the first in a series of two bastard generations and culminate in a group which, though a very small one, I have retained in separate place in some tables, since the culmination referred to, is parallel and consistent with the variation of other figures in the series, which rise and fall in harmony. It consists of those who, having had bastard born parents, represented double bastardy in their persons and, both receiving and giving, had transmitted the heirloom with interest to a third bastard generation. The individuals comprised in it, occupied a position in their family line from which they could, if Janus-headed, have enjoyed a symmetrical prospect and retrospect of bastardy like their own. Some of the worst monsters of history find their place here. The combined influence of bastardization involving greater venality, and of doubled as well as trebled tainture, is drastically illustrated in Table V; the ratio of murderers in the small category where all these sinister influences coincide is six times as great as that of the group where but one was operative, four times as great as the latter where one of them was absent, and so on. A glance at Table VII, based on a corresponding gauge of female morality shows results pointing in the same direction:

Immunity to the penalty of crime indicates on the part of an individual or a class of offenders: first, a cunning choice of the offense, the place and time at which, and persons against whom such offenses may be committed with impunity or with least chance of detection; second, a knowledge of so much of the law as may enable the crim-

inal to avoid its snares, and if snared, to take advantage of loop-holes of escape, which indeed are often provided for, in advance of, or in the very commission of the misdeed; third, a faculty of dissimulating guilt; fourth, readiness, in desperate situations, to sacrifice confederates, if pardon or lenity be obtainable thereby—in short, it is not going far wrong, to summarize the qualities useful in this direction as rascality in its most visible form. Tables II, III and IV compared, show, aside from the great immunity enjoyed by so large a part of all offenders, that the group with the larger ratio of offenders also has the larger proportion of immune evil-doers. In addition to the preponderance of criminals in Group II, it is found that among three hundred of simple tainture, ninety-three persons had been guilty of either one or several of the three felonies, murder, usurpation or sedition, of whom thirty-one escaped all consequences of those or other evil acts they may have committed; while of the division of doubly tainted, ninety-eight in all, sixty-one offended and twenty-nine of these escaped. For convenience I subjoin these figures separately.

DIVISION T.		DIVISION TT.	
Committed Offences;..	93 or per mille	310	61 or per mille
Total of Division.....	300	98	622
Immunes.....	31 or per mille	333	29 or per mille
Total of Offenders.....	93	61	475
Immunes.....	31 or per mille	103	29 or per mille
Total of Division.....	300	98	295

The doubly tainted division has over twice as many offenders and nearly three times as many of them immune to consequences as the other. Of the [former, practically] there escaped three for every two such in the division of simple tainture (1,4:1,0.)

The number of these individuals removed from the community through channels of a legal nature or in obedience to popular clamor and popular exigency is startling. Out of 400 males 42 suffered death under the hands of public executioners, or to evade such assistance committed suicide; 48 were victims of deliberate assassination or fell in riotous uprisings against or rebellious conflict instigated by themselves. Of those who thus perished by violence, excluding

death on the battle-field, in duel, or through accident, the number is nearly evenly divided between those whose removal took place under the auspices of legally appointed functionaries and those in whose case the delaying formalities, incident to their co-operation had been dispensed with.⁶⁵ In addition many were banished, outlawed, fugitives from justice or imprisoned [see Table III] usually in mitigation through executive clemency of the extreme legal penalty of the law. The higher absolute figure of the eliminated, which suggests a greater degree of criminality in itself, but even still more so the, notwithstanding this greater proportion of immune offenders among the doubly tainted, indicate an intensification of those characteristics on which criminality rests; and as the product of multiplication represents multiplier and multiplicand, we can but conclude that as bastardy is a factor involved in both, that the latter either crops out of or takes up and carries with it a criminal disposition.⁶⁶ By this abused term I mean a condition of protoplasmic vigor, manifested in aggressive and assimilative restlessness, free from the restraints or most of those which are comprised in the inherited inhibitory mechanisms of the legitimately born, in civilized communities. As the multiplication of bastardy by bastardy is accompanied by a multiplication of criminality found in single bastardy, it is reasonable to assume that the two are closely intertwined and stand on a common foundation, or that, both growing in the same favoring soil, alike flourish with its expansion. It might be here interposed that the excess of criminals among those of double tainture need not necessarily be due to that as an intrinsic factor. As their overwhelming majority is found with Group II, which as a group necessarily be in itself contributes more evil-doers than Group I, the characters determining the greater degree of criminality being presumably shared by its sub-divisions, this preponderance, it could be argued, might be really due to the sinister influence of their adulterine, meretricious or clandestine procreation, and not to an intensification of predisposition thereto by the multiplied bastard tainture. This can be tested by separating each group, into divisions according to tainture. The

resulting tables prove, as far as figures may, that the apparent rise of the criminal ratio in the aggregate of those doubly tainted is due to both factors, each acting independently though parallel with the other. Whatever the underlying reasons are, whether they be identical or distinct, they are connected with the baser form of procreation in the one case, of multiplied bastardy in the other. When they coincide, an increment [Tables V and VI] is observed, in which both share, so that we may assume them to agree in their tendencies. The Table in which the crime of murder is used as guage, shows over twice as large a proportion of homicides among the doubly tainted as among the singly tainted of the benign form of bastardy. In the group of adulterine, meretrix-born and the offspring of clandestine intercourse the doubly tainted division again shows over twice as many murderers as those of simple tainture. Now, if we contrast the murderers in Group II of simple tainture, with the corresponding division of the benign Group I, we find almost treble as many homicides. A lesser discrepancy exists in the other division, the one of the doubly tainted; but still more than a double one, nearly 23:10. The united influence of sinister birth of the malign kind and of double tainture elsewhere shown is exhibited in the ratio of the fourth rubric; it trebles the proportion of homicides. [See also Table V.]

Among thirty-seven females with double tainture, all but two of whom appertain to Group II, twenty-seven were of immoral character or had been involved in illicit relations at some time; twenty-six of these had procreated illegitimately. Of eighty-three with simple tainture, twenty-one had been likewise; four in the better Group I out of the thirty-one; and seventeen out of the fifty-two of the bad Group II. [Table VI]. These figures nearly correspond to the figures indicating male criminality.

What these Tables show as to the frequency of deeds of aggression by those of one sex, and such of indulgence by those of the other is confirmed by Tables II, III and IV relating to criminality and immorality in general. Other features, such involving individualities and not susceptible of statistical

demonstration, point in the same direction. But the strongest verification is found in the two endogenous ratio changes, which are explicable only if we assume that bastardy in itself, involves factors identical in origin with, or developing in the same way as those, which underlie criminality in the general population; but active in markedly higher degree. One of these ratio changes corresponds to the intensity of tainture, being higher with its darker shades, such as mark the offspring of meretricious and adulterous intercourse, and lower with the lighter tainted, born of amatory and morganatic unions. The other rises and falls with the greater and lesser extent of the family line stained by illegitimacy, whether ascendant, descendant, or both. As the influence of their causes is parallel, their concurrence in the same subjects results in a cumulating rise to a point higher than the one reached when either operates singly. Thus far I have merely hinted that bastardy is one of the widest channels by which crime is disseminated and multiplied. It is thus active in other ways than the ones made apparent in these figures. Law therefore is as strongly justified in discouraging bastardy to the full extent of its power, as it is in eradicating the source of, or blocking the channels of access, by which any agency of evil threatens society.

Investigation and analysis of individual cases does not sustain the impression, so plausible *a priori*, that poverty, contemptuous treatment, sense of disgrace and exclusion from walks of life reserved for the legitimate are to any great extent accountable for the oblique courses so frequently followed by the sinister-barred. Relatively benign characters are found among the discarded and neglected, as often as demonic malignants develop from pampered children and patronized favorites.⁶⁷ The notorious monsters of bastard birth in history occurred almost exclusively among those who had been inviduously distinguished by fatherly fondness, or favored by fortune in other ways; a few like Elagabalus were spoiled pets of the populace. Opportunity offered by possession of wealth for multiplying mischief with the legitimate offspring of the affluent, has also been given to their illegitimate offspring, and with the like

but more manifold results! The propriety of incorporating as one "Defective Class" the deformed in brain or body, the victims of disease or disaster, and those transgressing through misery or malice, doubtful as it seems to me on most grounds, appears particularly so in the light of this enquiry. In no way do its results sustain a relation between insanity and criminality, prominently as the latter crops out in them; in part they are antagonistic to that popularized dogma expounded by the "*uomo delinquente*" school.⁶⁸ The illegitimately born of healthy parents, are at least as robust as those legitimately born of like parents, nay rather more so. Opportunities for comparing the legitimate and illegitimate offspring of the same father are not few; and, where there exists a notable difference, psychically or physically, it is in the former respect more frequently in favor of the bastard, in the latter almost invariably so. The rare instances offering opportunities of comparing offspring procreated before, with such procreated after marriage, both parents being the same, confirm what is found in the former more numerous, though, as tests, less pure cases.

To be continued.

See Tables on following pages.

Footnotes will appear in January Number.

648 TABLE I. Showing number of homicides among 398 males, illegitimately born.*

Classes	GROUP I.					GROUP II.					Total Classes & D.	Total Classes
	A. Burglary.	B. Assault.	C. Gangsters.	D. Murder.	E. Murders.	F. Murders.	G. Murders.	H. Murders.	I. Murders.	J. Murders.		
Total of illegitimately born males.....	35	60	101	196	68	84	50	202	398			
Do. committed or attempted murder.....	2	4	15	21	17	30	16	63	84			
Do. murder percentage.....	$.05\frac{7}{16}$	$.06\frac{9}{16}$	$.14\frac{8}{16}$	$.10\frac{7}{16}$	.25	$.35\frac{4}{16}$	.32	$.31\frac{1}{16}$	$.21\frac{1}{16}$			
Do. motives connected with dynastic or governmental questions and political ambition.....	2	3	14	19	14	12	4	30	49			
Do. motives of a personal or vulgarly felonious nature.....	0	1	1	2	3	18	12	33	35			
Ratio of two latter classes per 100 total murderers.....	100:0	75:25	94:6	90:6	82:17	40:60	25:75	47:52	58:41			
Murderers of their kin.....	2	2	7	11	9	5	7	21	32			
Percentage: Murderers of kin among total of illegitimate.....	$05\frac{7}{16}$	$03\frac{3}{16}$	$06\frac{9}{16}$	$05\frac{5}{16}$	$13\frac{2}{16}$	$05\frac{1}{16}$	.14	$10\frac{3}{16}$	.08			
Do.: Ratio to total of <u>Murderers</u>	100:100	50:100	46:100	52:100	52:100	16:100	43:100	33:100	38:100			

*The cases are classified according to the nature of the parental relations, as explained in the sequel.

TABLE II.

(Males only.)

GROUP I.

GROUP II.

Ratio of Group II to Group I,
the latter as a standard.

Chief crime if any committed by sufferer...	Murder.			Usurpation.			Rebellion.			Lesser or no offense.			TOTAL and Ratio pro mille.			TOTAL and Ratio pro mille.			TOTAL and Ratio pro mille.			TOTAL and Ratio pro mille.			
	Executed.....	Assassinated	Suicides.....	3	0	9	3	15	76	15	0	8	1	24	118	15	61	21	0	4	11	36	174	1,00	1,00	1,00
Total of those whose career terminated by a violent death, excluding those dying on battle fields, in duello, or by accident.	7	2	9	12				30:	$\frac{153}{1000}$	37	1	15	14	67:	$\frac{331}{1000}$								1,00	2,16	

TABLE III.

GROUP I,

GROUP II

(Males only.)

Chief offense committed.....	Murder.	Usurpation.	Rebellion.	Lesser or no offense.	TOTAL and RATIO.	Murder.	Usurpation.	Rebellion.	Lesser or no offense.	TOTAL and RATIO.
1. Imprisoned, banished or fugitives from their native land.....	1	1	8	5	15: $\frac{76}{1000}$	8	1	5	8	22: $\frac{108}{1000}$
2. No vicissitudes nor penalties known to have been undergone.....	12	12	3	124	151: $\frac{770}{1000}$	19	9	5	80	113: $\frac{559}{1000}$
E. C. Spitzka.										
3. Total of those in this and Table II.....	20	15	20	141	196	64	11	25	102	202
4. Ratios of third rubric.....		$\frac{102}{1000}$	$\frac{76}{1000}$	$\frac{102}{1000}$			$\frac{316}{1000}$	$\frac{54}{1000}$	$\frac{123}{1000}$	
5. Total of eliminations including those removed by violent means (Table II) with those in first rubric of this table.....	8	3	17	17	45: $\frac{229}{1000}$	45	2	20	22	89: $\frac{440}{1000}$

*The lesser offenses were not computed at this time, so they appear in Table IV, where the preponderance of Group II as to low felonies is one of the factors manifest.

TABLE IV.

Showing degree of relative immunity to consequences of felonies, among the offenders in 518 illegitimately born males and females.	Aggregate of Classes A, B, C, D.	Do., of Adulterine and Meretrici- born (E and F)	RATIO.
1. Committed offenses while <i>in a situation* to be held amenable to existing laws</i>	46	61	1,00 : 2,11
2. Ratio	$\frac{144}{1000}$	$\frac{305}{1000}$	
3. Suffered adequate penalties.....	27	16	1,00 : 0,44
4. Ratio	$\frac{586}{1000}$	$\frac{262}{1000}$	
5. Evaded such by flight, turning States Evidence, shifting guilt to others or incurred ridiculously inadequate punishments.....	10	16	
6. Escaped all and any consequences of their crimes.....	9	33	1,00 : 2,76
7. Ratio of latter to total of offenders....	$\frac{195}{1000}$	$\frac{540}{1000}$	1,00 : 5,89
8. Do., to total of classes.....	$\frac{28}{1000}$	$\frac{165}{1000}$	
9. Ratio of aggregate, entirely or partly immune to total of offenders.....	$\frac{413}{1000}$	$\frac{803}{1000}$	1,00 : 1,94
10. Do., to total of classes.....	$\frac{59}{1000}$	$\frac{242}{1000}$	1,00 : 4,10

*Obviously, it were faulty to include those whose immunity was due to monarchial or governmental position. Were these included the figures of Group II would not be so markedly in disfavoring contrast, for crimes committed from political motives, like the summary execution at the order of Ptolemy nothus (Auletes) of Berenice, the starvation of Rothsay by Albaav and secret execution of Crispus, bear a larger proportion in Group I. In Group II, homicide, for example, appears more frequently the expression of vulgar, felonious motives.

TABLE V.

	Adulterine (F) and Meretricx-born (E)				Aggregate of remaining			
	aggregate of males				Classes A, B, C and D, viz: 'Morganatic,' 'Amatory,' 'Concupinage' and 'Clandestine'			
whose parents were one or both of them illegitimate-ly born,	whose parents were re-puted of legitimate birth,							
procrea'd had not a third so generat'n procrea'd of bastards.	procrea'd not a second known to generat'n have so of bastards.	Total	Total	Total	Total	Total	Total	Total
Total in Category.....	6	17	23	21	78	99	122	276
Homicides, simple.....	2	4	6	3	15	18	24	18
E. C. Homicides guilty of usurpation.....	3	2	5	2	1	3	8	14
Homicides guilty of treason, rebellion or sedition.....	...	4	4	4	6	10	14	6
Total of Homicides.....	5	10	15	9	22	31	46	38
Proportion <i>pro mile</i>	833	588	427	296				137
Ratio crudely expressed, proportion in last column as the unit.....	6	4	3	2				1

*The Legal Disabilities of Natural Children.***TABLE VI.**

	GROUP I.		GROUP II.		Total of Female Illegitimate.	Ratio of Groups; II as the unit in up- per line; I as the unit in lower line.
	Including "Classes," "Mor- ganatic," "Amatory," and "Concubinal."	Including "Classes," "Cland- estine," "Meretricious," and "Adulterine."	Total. Unhonest. Per Cent.	Total. Unhonest. Per Cent.		
Showing Influence of Extent of Tainture on Sexual Morality in 120 Illegiti- mately Born Females.						
Division T "Simple Tainture."	a Total in group..... 31	52	83	39 : 100		
	b Of Unchaste Character ...	4	17	21		
	c Percentage of Latter .....	.12 ⁹	.32 ⁶	.25 ³	100 : 252	
Division TT "Double Tainture."	a As Above..... 2	35	37	vacat		
	b	0	27	27		
	c .....	.....	.77 ¹	.72 ⁸	0 : 100	
Total of Females.	a	33	87	120	23 : 100	
	b	4	44	48		
	c .....	.12 ¹	.50 ⁵	.40	100 : 417	
Procreated in Adultery or had Adulterous Relations	1 .25	16 .36 ³	17	.35 ⁴		
Breached or had Liaisons without Breach of Wedlock.....	3 .75	28 .63 ⁶	31	.64 ⁵		

Table VII.

	GROUP I. Morganatic, Amatory & Concubining.	GROUP II. Clandestine, Marriages and Adulterine.	TOTAL MALES.	Ratio of Homicides of Total. Homicides. Percent'g.
	Total. Homicides. Percent'g.	Total. Homicides. Percent'g.	Total. Homicides. Percent'g.	Group I to do. Group II.
T Division of Single-tainted.....	169	131	300	
Do. Homicides.....	15	34	49	100 : 294
Percentage of Homicides.....	.08 ³ ₁₀	.25 ³ ₁₀	.16 ³ ₁₀	
TT Division of Doubly-tainted.....	27	71	98	100 : 228
Do. Homicides.....	5	30	35	
Percentage of Homicides.....	.18 ⁴ ₁₀	.42 ³ ₁₀	.35 ⁷ ₁₀	
Total Males.....	196	202	398	
Do. Homicides.....	20	64	84	
Percentage of Homicides.....	.10 ⁴ ₁₀	.31 ³ ₁₀	.21 ³ ₁₀	
Ratio of Homicides per centum in Division of single-tainted to that of double- tainted, the former assumed as standard.....	100:210	100:162	100:212	

Ratio of Homicides per centum in Division
of single-tainted to that of double-
tainted, the former assumed as
standard.

SELECTIONS.

NEURO-THERAPY.

THE DANGERS OF CAFFEINE.—According to the *Indian Medical Record* for July 12th, the popular idea of the harmlessness of caffeine has been dealt a blow by Dr. M. K. Zenetz, extraordinary professor of therapeutics at the faculty of medicine at Varsovic, who shows that it may cause sudden death by arrest of the heart in systole. He cites three cases: One was that of a woman free from any organic lesion, who, feeling indisposed, took every two hours a powder containing thirty centigrammes (4.5 grains) of citrate of caffeine; after the fifth dose she fell down in a state of syncope, from which she was roused with difficulty. After recovery she continued to take caffeine, and died suddenly after taking another five powders. The second was a case of pneumonia. The patient died suddenly after taking in the space of two days one gramme, twenty centigrammes (eighteen grains) of citrate of caffeine. The third was a woman suffering from nephritis. She died suddenly when taking caffeine. In these three cases the heart was found at the autopsy to be so firmly contracted that it could with difficulty be cut with a scalpel. In other cases also serious symptoms have been observed. When the caffeine is stopped it continues to appear in the urine for from ten to fifteen days. It is, therefore, eliminated slowly by the kidneys, and its dangerous effects are due to its accumulation in the system.—*New York Medical Journal*.

TOXIC PROPERTIES OF BEEF TEA.—The most vehement and vigorous arraignment of beef tea extract comes from *Modern Medicine*. The nutritive value of beef tea has long since been shown to be nil. We did not suppose, however, that beef tea made from cooked extract was so toxic. In view

of the fact now so well known respecting the toxic character of beef tea and meat extracts of all sorts, it is certainly surprising that physicians continue to prescribe meat extracts, broths, bouillon, and similar preparations in all sorts of conditions. It is indeed especially surprising that such pseudo foods should be recommended in cases of acute general toxæmia such as is present in typhoid, pneumonia, diphtheria, and allied conditions. An eminent French surgeon not long ago remarked, "Beef tea is a veritable solution of poisons." The analysis of beef tea shows that it contains urea, uric acid, creatinin, and a variety of other toxic substances. Grijins has shown that solutions of urea have a most destructive effect upon red blood-corpuscles. Such solutions cause the corpuscles to swell up and burst, as they do when exposed to the action of distilled water.

A most remarkable fact respecting solutions of urea is that the addition of chloride of sodium in sufficient quantities to give the solution the same specific gravity or osmotic tension as the blood itself, does not in the slightest degree prevent this destructive action upon the corpuscles, thus showing that its noxious qualities are specific, and that it is not, as was suggested some years ago by Bouchard, a comparatively neutral and innocuous substance. An extract from the tissues of a dead and decomposing animal is about the last thing that ought to be given a patient who is already struggling against the toxic influences of a flood of systemic poison. In the juices of fruits, nature has given us a source of energy in the most available and acceptable form. Fruit-juices of some sort may be recommended as preferable in every condition in which beef tea might be considered a desirable food. Properly prepared fruit-juices, preserved by sterilization without fermentation, actually present the body with stored energy in a form available for immediate use; whereas, beef tea is simply a solution of products whose energy has been exhausted, and acts merely as an excitant without really augmenting the bodily energy to any appreciable extent.

IODOHYDRIN IN MYXOEDEMA.—Dr. Sydney Kuh, (*Philadelphia Medical Journal*, April 8, 1899) describes two cases

of myxœdema with apparently atrophic thyroid glands. He used desiccated thyroids in one case, and in the other iodo-thyrin. The effect of the last upon the myxœdema was as good as the thyroid glands but no untoward effect resulted.

NAPELLINE AS A MORPHINE SUBSTITUTE.—Rodet (*La Presse Med.*, April 5, 1899) claims that Napelline given hypodermically is an excellent substitute for morphine during the period of withdrawal.

SODIUM BROMIDE IN CHRONIC MORPHINISM.—Dr. J. C. Verco claims (*Australia Medical Gazette*, March 20, 1899) that a dose of half a drachm of sodium bromide every three hours for forty-eight hours will completely overcome the craving for morphine. The procedure is an old one and has met with more failure than success unless employed in conjunction with other remedies.

OVER-EXCITABILITY, HYPER-SENSITIVENESS AND MENTAL EXPLOSIVENESS IN CHILDREN.—Clouston discusses these conditions (*Scottish Medical and Surgical Journal*) and says regarding treatment that he has found the bromides to be the most effective in restraining normal nerve cell action and preventing it from assuming pathological proportions. The bromides must be given in doses large enough to control the conditions or until symptoms of bromsin are produced, and for long periods and then gradually discontinued. Along with the bromides, tonics and food medicines must be given and the diet must receive attention—in short, the child's general health and nutrition must be carefully looked after. Milk is the sheet-anchor as a diet and the child's environment must be the best possible; and it must have plenty of fresh air, suitable amusements, companionship and employment, and be under proper control.

Such a brain must receive its education in a physiological and medical fashion. In acute phases, five to ten grains of sulphonal twice daily is useful in accentuating the effects of the bromides. We should aim to diminish undue cell catabolism and reactivity in the cerebral cortex without interfering with brain anabolism or general body development.

STRONTIUM BROMIDE IN EPILEPSY.—Mr. Antony Roche, of Dublin, who has before written upon this subject, finds now (*Lancet*, April 22d), from numerous letters that he has received from members of the profession, that considerable interest has been excited, and that, while some of his correspondents have tried the system he has advocated with success, others apparently have failed to comprehend his former communications, or have expected results which he never suggested as possible. For example, he never supposed that the bromide of strontium would improve the mental condition of children suffering from fits in whom there was congenital malformation of the brain, or that it could benefit the mental faculties of persons who suffer from fits associated with advanced cerebral disease. The most to be expected in such cases from the bromide would be the lessening of the frequency of the attacks. Again, he never asserted, as some of his correspondents appear to think, that the bromide was invariably successful in all cases of even so-called idiopathic epilepsy, or that the drug had simply to be poured in without any other treatment or regulation of habits, diet, etc., to be successful. It is a very elementary consideration in the treatment of epilepsy, as indeed in that of all diseases, he remarks, that each individual case must be studied and treated; for success in the treatment given by one medical man, as compared with another, depends mostly upon the care and thoroughness with which it is carried out. For example, in each case of epilepsy beginning in adult life, whether any predisposing or exciting cause can be detected or not, infection by syphilis should always be borne in mind, and Jacksonian attacks should excite suspicion; even when the form is the ordinary one, syphilis may be the cause, as he knows from experience. In such cases he gives the iodide of strontium with the bromide. He finds the strontium iodide more efficient and less depressing than the potassium salt. For some years he has used strontium iodide not only in these cases, but also in rheumatism, asthma, etc., in place of the potassium iodide, and thinks it is more easily taken.—*Journal American Medical Association.*

CLINICAL NEUROLOGY.

GENERAL MUSCULAR PARESIS DUE TO INFLUENZA.—M. Boutry (*Bulletin de la Société médicale des praticiens*, January; *Nord médicale*, May 1st) reports a case in which it gave rise to a generalized semi-paralysis that became serious by reason of its involving the respiratory muscles. It was five months before the patient could be considered as cured.—*New York Medical Journal*, June 17th.

A CRETIN GROWS THREE INCHES AND CUTS FOUR TEETH AFTER THIRTY.—An instance of very marked improvement in a case of this fortunately rare condition is reported by Dr. Wharton Sinkler in the *Philadelphia Medical Journal*. The medicament employed was Parke, Davis & Co.'s thyreoids in doses of three grains three times a day. The most striking points relative to the case are that, after the age of 30 years, the patient's height increased nearly three inches through the administration of thyreoids only; also that menstruation, which had not appeared until the age of 26, and then occurred scantily at intervals of three or four months, became regular and normal; that four additional teeth were cut; and that her intelligence was much improved.

ATOIOLOGY OF NIGHT TERRORS IN CHILDREN.—Dr. E. Graham (*British Medical Journal*) basing his deductions upon a series of thirty cases, concludes as follows:

1. Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnoea.
2. A preponderating number of cases are found in rheumatic subjects with early heart disease.
3. A considerable proportion of cases are due to obstruction of the nasal cavities and fauces.
4. Digestive disturbances do not play the important part in causation that is often assigned to them.
5. The evidence for their causal connection with epilepsy or allied neuroses is scanty.
6. The attacks occur in the subconscious stage of early sleep and are confined to young children under puberty.

FAMILY MYXOEDEMA.—Dr. E. H. Small describes (*Medical Review* Oct. 14, 1899) a seeming family type of

myxoedema. The patient was twenty-eight years old at the time the trouble began. It was first observed in the legs, which increased in size; the skin became dry, thickened and scaly, with a marked increase in weight. At the time he came under observation the face was swollen, the lips broad and thick, nostrils broad and mouth enlarged, but no noticeable enlargement about the eyes. The lines of the face were nearly obliterated, and there was a dull expression. The legs and ankles were swollen and edematous, but there was no pitting on pressure. Memory was impaired and speech slow. The temperature was sub-normal and the urine was free from albumin. The mother of this patient died when sixty-three years of age, after having suffered for twenty-three years from a malady like the patient's. A sister is similarly afflicted, and a brother, now dead, had a like trouble, which was diagnosticated as chronic nephritis.

HYPOTONIA, FRANKEL'S SYMPTOM.—Under the name of hypotonia, Dr. Fränkel some time ago called attention to a peculiar symptom as characteristic of locomotor ataxia. If a normal man lie down upon the floor, or other flat surface, upon his back, with the head on a small pillow, and raise the legs until they are fully flexed upon the trunk, the knee, unless it be in exceptional cases, will always be very decidedly bent. On the other hand, the tabetic person can, in the position just spoken of, completely straighten his legs when at right angles to the body—so at least it has been stated.

In studying this symptom in a number of cases both in normal and diseased individuals, I have found that in the great majority of cases of locomotor ataxia the patient is able, as stated by Fränkel, to fully straighten the legs at right angles to the body; and on the other hand, I have seen very few normal individuals who could do so. I have been told by certain athletes, that they had known other athletes who had acquired such power by long training, but the person entirely free from suspicion of nervous disease, in whom I have seen it, was a woman with general lack of muscular tone, and in whom the knee jerk was wanting.

I have had opportunity of studying two cases of tabes, in which the lesion was chiefly, if not exclusively confined to the upper portions of the spinal cord; the symptoms being ocular, including complete blindness, with disturbances of co-ordination almost confined to the upper extremities and fulgurant pains, most marked in the head and neck, and not occurring below the arms. In one of these cases the patient could not straighten the legs, and the testing demonstrated that the kneejerks were well preserved. In the other case the patient could almost straighten the legs, and the kneejerks were almost lost.

I believe myself that the power to fully straighten the legs depends simply upon a great loss of muscular tone, and that this condition is also at the basis of the loss of the kneejerks; so that one symptom is always parallel with, if not equivalent to the other. Complete hypotonia, however, probably depends upon a more complete loss of tone than does loss of kneejerks. Thus, in a case seen very recently, in which the only symptoms were a slight squint, a sense of intense coldness between the shoulders and in the back, spreading at times through the body, and amounting at times to a distress which almost drove the patient mad, and entirely absent kneejerks, the hypotonia was distinct but not complete, the patient being able to nearly but not absolutely straighten the legs at right angles to the body.

Again, in a case of diphtheric paralysis, in which the patient could walk fairly well, but was distinctly weak in the legs, and even paralytic in the anterior tibial group, and in which the kneejerks were completely lost and did appear on reinforcement, the hypotonia was pronounced, but at least in one leg not complete.

The close connection between hypotonia and the knee-jerk seems to me to make the new symptom of comparatively little value in the diagnosis of primary tabes; if, as I believe, the two symptoms to be different expressions of the same conditions, it is plain they must usually coexist, and that the presence of one does not strongly increase the diagnostic value of the other. This is well illustrated in the case last spoken of. Paresthesia, acquired squint, absent knee-

jerks, are certainly strongly suggestive of the presence of an incipient tabes, but are hardly sufficient for the diagnosis, as it is possible that the most important of these symptoms, namely, the knee-jerk, might have long existed.

If the knee-jerk had been known to have been present a year ago, and to have disappeared with the development of the paresthesia and the squint, the diagnosis of incipient tabes would have been justified; but in the face of the assertion of the patient that in the winter of 1897-98 the peculiar distress and nervousness were as marked as at present, and that during the summer of 1898, when he was company officer U. S. V., daily employed for many hours in hard drilling with his men, the disagreeable sensations disappeared along with 20 pounds of fat, it is certainly a possible explanation of his case that the paresthesia is of lithemic origin, or at least due to the presence in the blood of the results of over-eating and under-elimination.

The diagnosis seems to me, therefore, to remain doubtful; now, if a new distinct symptom of locomotor ataxia, as Argyll-Robertson pupil could have found, the whole matter would have been cleared and the diagnosis of tabes justified; hypotonia, however, is so closely associated with knee-jerk that it can hardly be called another symptom, and its presence in the case had, at least to my mind, little diagnostic importance.

Hypotonia, of course, is not to be confounded with paralytic loss of power in the thigh. In it the patient himself straightens the leg: in various diseases, as sometimes in poliomyelitis, the knee can be straightened not by the patient himself, but by the medical or other attendant, making passive movement. This is not hypotonia, but paralysis.—BY H. C. WOOD, M. D. June 17, 1899.—*The Philadelphia Medical Journal.*

CLINICAL PSYCHIATRY.

LIABILITY FOR WRONGFUL CERTIFICATE OF INSANITY.—The duty which a physician is frequently called

to perform, of passing upon the mental state of a fellow man, who, by virtue of his judgment, is either permitted to remain at large or is confined in a lunatic asylum, is a most grave and responsible one. An error of judgment may, on the one hand, mean a menace to the peace and even safety of the community, on the other hand, an unjust and lamentable deprivation of that most important of all rights, personal liberty.

The purpose of the present examination of law is, however, to examine the physician's liability for an improper exercise of these functions, and not the physician's duties and obligations to society or to the person whose sanity is in question, except in so far as they affect the real subject of inquiry.

The method of determining the mental condition of one suspected of being insane is regulated in the several States by statutes differing somewhat in the different jurisdictions. A common method, however, of obtaining summary protection from the violence or possible violence of a lunatic is to confine him upon the certificate of usually two reputable physicians. What civil liability the physician incurs who errs in making this certificate is the question to be considered.

The first step to be taken in passing upon the liability of a physician is to determine whether or not the certificate is in itself correct or false. If the certificate is found to be correct, this, it seems, is a complete bar to a civil action against the physician for damages, for, in the absence of a statute imposing a penalty for a failure to comply with a certain method or mode of procedure in determining the mental condition of the party examined, the physician incurs no liability for the inefficiency of the modes which he pursued in reaching and certifying a correct conclusion. Moreover, it has been held that the burden of proof is upon the plaintiff to show that at the time the certificate of insanity was given he was in fact sane, and that until this fact is shown by a preponderance of evidence the physician signing the certificate can not be held liable.

It appearing that the certificate of insanity is incorrect,

and that the physicians have erred in their conclusion and certified to a condition which did not exist, does it then follow that a civil action for damages in favor of the person who has been wrongly impressed will lie against them? The answer to this question is practically the same as that which has been made to nearly every question arising in the cases of malpractice examined in these articles—viz., if the defendants were possessed of the ordinary amount of knowledge and skill which the law requires for the proper exercise of their duties, and if they used ordinary and reasonable care in making the examination and exercised their best judgment in determining the party's mental condition, then they are not liable, whether their conclusion is correct or not. There is a prominent English case in which this question was passed upon and the law governing the defendant's liability lucidly and elaborately expounded by Justice Crompton in his instruction to the jury. The case is rather voluminous, covering over thirty pages in the volume of reports where it is recorded, yet a brief examination of the facts and the law which was held to be applicable will probably compensate in enlightenment for the time required. The plaintiff was a shopkeeper in London, who lived very discordantly with his spouse—in fact, the want of domestic harmony was frequently manifested in outbursts of violent temper, in which the use of abusive and obscene epithets was common, and even physical violence to the wife's person had been complained of. The plaintiff complained, among other things, of the wife's extravagance, and the evidence did show that she had taken articles from the shop and pawned them. The wife was accustomed to going to certain physicians with her complaints regarding the husband's treatment, among whom was one of the physicians who subsequently signed the certificate of lunacy. Upon one occasion when the husband met this physician and his wife together he made a remark which the physician construed as an imputation against the wife's chastity, but which the husband apparently did not so intend. The wife also claimed that the husband slept with a drawn sword by his bed and that he repeatedly

threatened her life. The defendant in the case, together with the physician above referred to, perhaps from a desire to relieve the wife from the hardship of the husband's persecutions, after a few minutes' conversation held with him at different times, signed separate certificates of his insanity in which they respectfully assigned the grounds for believing him insane, as follows:

First Certificate: 1. Facts indicating insanity observed by myself: He had a wild and staring look, with restless eyes and nervous, agitated manner. He represented to me that his wife was ruining himself and business, and he intimated that she was improperly associating with other men; he is evidently laboring under delusions, and he acts upon these delusions.

2. Other facts (if any) indicating insanity communicated to me by others.

He is guilty of repeated acts of violence; he constantly threatens his wife and often assaults her; he sleeps with a drawn sword by his bedside, and declares he will murder any one who approaches him, and he has often threatened to stab his wife.

The defendant who signed this certificate had not seen the sword at the time of certifying the plaintiff insane, but he afterward learned that the "drawn sword" was a theatrical or court dress sword.

Second Certificate: 1. Facts indicating insanity observed by myself: He had a restless, irritable and excited manner, with a glaring look, and expressed much vindictiveness toward his wife, and said, "I must be a fool to mind what that woman has said." He said she had her fellows continually running after her, and intimated that I was one of them.

2. Other facts (if any) indicating insanity communicated to me by others:

On a former occasion, when I had called to see him, he had just before broken the looking glass to pieces, also the marble mantel and bedstead; he had been brandishing knives over his wife's head, and using horrid language, sometimes kicking her, tearing her bonnet and clothes off,

and all without provocation, as I find from neighbors and old acquaintances that she is a discreet, sober, prudent and patient woman.

This certificate was based upon an interview had more than seven days previously, and was accordingly under the English statute, irregular, and of no effect. The plaintiff was released when the irregularity of the certificate was discovered, and he soon thereafter commenced suit against the defendant for damages.

The law which was held to govern in the case can probably be no better expressed than in the words of Justice Crompton taken from his charge to the jury. Therein the judge said: "Take me as saying to you in point of law that if a medical man assumes under this statute the duty of signing such a certificate, without making and by reason of his not making a due and proper examination, which a medical man under such circumstances ought to make and is called on to make, not in the exercise of extremest possible care, but in the exercise of ordinary care, so that he is guilty of culpable negligence, and damage ensues, then, that an action will lie, although there has been no spiteful or improper motive, and though the certificate is not false to his knowledge.

"The true ground of plaintiff's complaint is the negligence of the defendant, and the want of due care in the discharge of the duty thrown upon him; and I think that if a person assumes the duty of a medical man, under this statute, and signs a certificate of insanity which is untrue, without making the proper examination and inquiries which the circumstances of the case would require from a medical man using proper skill in such a matter, if he states that which is untrue and damage ensues to the party thereby, he is liable to an action, and it is to that I desire to call your particular attention. It is not that a medical man is bound to form a right judgment so as to be liable to an action if he does not. There are cases of insanity which are very difficult to deal with or to understand. But what he is required to do is to make an examination, and, if it be necessary, to make such inquiries as may be required. It would be

unjust if a man were to be visited, in cases of this kind, with consequences arising from mere error of judgment or mistake of fact.

"There must be, to make him liable, negligence in the discharge of those proper duties which it must be taken he has assumed in undertaking to sign the certificate of insanity, and if you are satisfied that there has been negligence with reference to these matters—culpable negligence, as I have described—then he is liable. Now, I can not help thinking in a matter of this kind, which is not like a mere preliminary inquiry before a magistrate, but a proceeding upon which a man is to be at once confined to imprisonment as a lunatic, very considerable care is necessary. One can hardly say precisely what that degree of care may be. It is said that one man may be satisfied with a quicker examination than another. We, for instance, would take a long time before we should be able to form a judgment in a matter of this kind. A person experienced in such matters might decide more quickly, while an ordinary medical practitioner might require a longer time. We take it as clear, however, that considerable care ought to be used."

The jury in this case rendered a verdict for the plaintiff, assessing him damages at one hundred and fifty pounds.

The principles which were held to govern in the English case have been accepted as the law by American courts whenever this question has arisen, and will undoubtedly continue to be so accepted. Therefore, as long as the physician possesses proper knowledge and science and conducts the examination with reasonable and ordinary care the result of his conclusion will never despoil his estate, even though in the exercise of his best judgment he may have been in error.—Arthur Taylor, *Law in its Relations to Physicians*, *N. Y. Medical Journal*, Sept. 2, 1899.

"OLD MAIDS' INSANITY."—Mr. J. W. Handfield Haslett (*Treatment*, June 8th), in an interesting paper on Some Climacteric Neuroses, read before the Thames Valley Branch of the British Medical Association, says:

"There is another variety of climacteric disease which is

purely mental, of slow development, and very incurable. For want of a better name, it is called 'old maids' insanity.' This variety is not very common, and I have only had three cases under my care. It occurs in single women who have led a severely strict and virtuous life, devoting themselves to religious and intellectual work, and carefully repressing the animal side of their nature. They are generally far from attractive, but this, I presume is a coincidence. Just before the menopause sets in there seems to be a spurt of erotic excitement, and some unfortunate man, frequently a clergyman, becomes the victim of their attentions. One of my cases was a very typical one, and may be thus shortly described. The lady was forty-two and lived a rather solitary and egotistical life in lodgings, being very much devoted to church matters. She was a member of the flock of an aged vicar, who was a very accessible man, and no doubt the lady saw a great deal of him. At any rate, she never missed an opportunity of seeing him, and he could never turn a street corner without running the chance of meeting her. Her whole life became dominated by one thought—the vicar. This doubtless arose from the fact that she had no other interest in life. Every word the vicar said to her and every glance from the pulpit was construed into a confession of devotion. She told all her friends of his undying love for her, and no doubt the vicar, hearing of it, was more embarrassed in meeting her, and this added to the confession of his attachment. The poor vicar's life was a misery to him. But it did not end here. Insane suspicions began to arise; she believed the vicar had bribed the doctors to give her medicine which affected her sexual health, and she described to me how the drugs they gave her turned the lower part of her body green. Then the inevitable jealousy arose, and another woman became the object of her insane dislike. At last matters reached a climax. One Sunday in church she rose up and accused the other lady of trying to estrange the vicar's affections from her, and ended by chasing her rival around the aisles with the family umbrella. This was too much; she was certified next day and sent to an asylum. This

all happened some years ago. The lady still has her delusions, although they have faded considerably and are less in evidence; still, they are there all the same. There is much moral perversion. The patient is a masturbator, and puts a meretricious construction on the most innocent actions of her friends. She has made self-indulgence a fine art, is indolent and selfish, yet withal deeply religious.—*Journal American Medical Association.*

SEXUAL INVERSION, JEALOUSY AND HOMICIDE.—According to *Medicine*, June, 1899, the following case of attempted homicide seemingly consequent on sexual inversion jealousy occurred in Chicago. Charles L. Seibert was shot by Mrs. Nettie A. Miller possessed a strong affection. Mrs. Miller declares that Seibert entered her store and threatened her, and that this led to the shooting. According to Seibert's version, he was standing on the sidewalk several doors from Mrs. Miller's place when she came out of her store. As soon as he saw her he started to move away, stating that he had heard of the threats she had made, she having threatened to kill Miss Leonard as well as the man she had married. The story told by Mrs. Seibert, who had for years been the object of Mrs. Miller's affections, is that she had lived with her for fourteen years and claimed to have been held under hypnotic influence. She stated that when she first lived with Mrs. Miller, the latter was taken sick, and during that time fell desperately in love with Hattie Leonard. This infatuation deepened more and more as time went by. It grew so strong that Mrs. Miller forebade her going with any man or accepting the attentions of any one. Mrs. Seibert states that during the fourteen years that she was under the influence of Mrs. Miller she left four different times, and each time was forced to go back by the influence of this hypnotic power. She states that she is unable to explain, any further than that she tried to resist and she could not.

Mrs. Seibert states that several times she was threatened by Mrs. Miller, and in 1889 she assaulted her for accepting the attentions of a drug clerk; she also threatened him at this time, and on this account they were com-

elled to stop going together. In the account of the incident it is stated that Mrs. Miller has been twice married and never lived with either of her husbands. Her mother died some years ago in an asylum, and it is stated that her brother committed suicide in Milwaukee in 1885. The victim of the attempt at homicide having recovered, Mrs. Miller was charged with disorderly conduct, fined and compelled to give peace bonds. She is a trained nurse by occupation. According to *Medicine* the case is meagerly reported, and consequently is of little value from a scientific standpoint. It is referred to here simply as showing one of those singular aberrations which sometimes lead to the commission of crime, and which it is so difficult to classify from the standpoint of responsibility. Aberrations of the sexual instinct are among the most striking stigmata of inherited nervous instability, but to say that every such person is irresponsible is to simply beg the question. Jealousy has furnished motives for crimes innumerable. The relation of motive and mental responsibility are not altered because the object of the affection happens to belong to the same sex as the perpetrator. At least two striking homicides of this character have occurred within a few years, in both of which the accused was acquitted on the plea of mental disease.

The mere fact alone of the existence of the inversion, *Medicine* states, is not sufficient evidence of irresponsibility. The attending circumstances and other signs of mental defect must be taken into consideration. This is the second attempt at homicide in five years in Chicago because of sexual invert jealousy. The first attempt proved successful and the woman committing it was sent to the penitentiary for a term of years. The victim was a man who, as in the present instance, had courted the passive member of the sexual invert partnership. Both the women in this instance were octofoons. The two cases to which *Medicine* refers were those of Alice Mitchell and Hattie Deuell. The first was acquitted on the ground of insanity, but the other was convicted of manslaughter in the heat of passion. The position of *Medicine* in regard to the psychiatric aspect of sexual inversion *per se* is that taken by the majority of

alienists and has been urged in the columns of the ALIENIST AND NEUROLOGIST for the past decade.

CLASSIFICATION OF INSANITY.—Dr. Edwin Cowles proposes (*American Journal of Insanity*, July, 1899) the following classifications of insanity based on that of Kraepelin:

<p>"Symptomatic and Functional Psychoses."</p> <p>(Not tending to Dementia.)</p> <p>Essential Dementias or Dementing Psychoses (Tending to Dementia.)</p>	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Ordinary Insanity (Depressive-Maniacal).</p> <p>Depressed phase-melancholia.</p> <p>Excited phase-Mania.</p> <p>Confusional Insanity.</p> <p>(Exhaustion Psychoses).</p> </td><td style="vertical-align: top; padding-left: 20px;"> <p>Dementia Precox { Primary Dementia Hebephrenia Katatonica</p> <p>General Paralysis</p> <p>Primary Delusional Insanity (Paranoia) { Involution Psychoses</p> <p>Devolution Psychoses { Senile Dementia</p> </td></tr> </table>	<p>Ordinary Insanity (Depressive-Maniacal).</p> <p>Depressed phase-melancholia.</p> <p>Excited phase-Mania.</p> <p>Confusional Insanity.</p> <p>(Exhaustion Psychoses).</p>	<p>Dementia Precox { Primary Dementia Hebephrenia Katatonica</p> <p>General Paralysis</p> <p>Primary Delusional Insanity (Paranoia) { Involution Psychoses</p> <p>Devolution Psychoses { Senile Dementia</p>
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The objection to this table from its own standpoint is that it does not recognize the fact shown in Kraepelin's classification that paranoia does not tend to dementia unless complicated. The use of the term general paralysis is peculiarly objectionable in medico-legal practice. Paresis is better. Dementia paralytica is likewise objectionable. The best term for the paretic in all stages has not yet been devised.

TONGUE HEMIATROPHY.—Dr. E. Wiersma recently (*Neur. Centralblatt*, September 15, 1899) described six cases of tongue hemiatrophy of peripheral and of central origin. Unilateral atrophy of the tongue may occur, as a consequence of an extra- or intra- cranial lesion of the hypoglossus or of its center in the medulla. Atrophy unequally distributed over the affected half of the tongue indicates a bulbar rather than a peripheral lesion. Koch and Marie are of the opinion that paralysis of the soft palate and of the vocal cord on the affected side occurs where there is a bulbar lesion. This is due to the proximity of the nuclei of the hypoglossus, vagus, and accessories in the medulla.

POST-HYPNOTIC CONFUSION.—The dangers of hyp-

notism have been repeatedly insisted on by the majority of neurologists. To their warnings Dr. Higier adds (*Neur. Centralblit*, Sept. 15, 1899) an additional emphasis by the narration of a peculiar mental condition observed in hypnotic sleep. The condition is a confusional state in which the patient's mind is only moderately active and he responds to questions in a confused illogical manner. The patient soon becomes mentally normal, but does not remember occurrences during the post hypnotic confusion.

TREATMENT OF EXOPHTHALMIC GOITRE.—Dr. H. N. Moyer advises (*Medicine*, June, 1899) that rest should be employed if possible in the treatment of exophthalmic goitre. The patient should be put to bed for a month or two. Many cases, however, will not consent to this treatment, as they insist upon being up and attending to their duties. Next to rest, galvanism is the most important. The technique advised is that recommended by Dana; positive pole on back of neck, negative drawn along the course of the vagi in the neck, each side two minutes; same with positive pole placed under the ear, one minute; negative pole over thyroid, two minutes; negative over cardiac region, one minute. The strength of current to be from two to six milliamperes. If there be bradycardia the heart remedies indicated should be employed.

THE ACTION OF COLORED LIGHT ON MAN.—Dr.—Dr. Roffegean, of Paris (*Medical Press and Circular*, May 31, 1899), has published an interesting account of his treatment of nervous affections by colored light. In a room papered in red and with red glass windows he placed a maniac, who for a long time was somber, affected with taciturn delirium, and ate rarely of his own accord. Three hours after being placed in the room he visited him, and to his great surprise he found him smiling all over, and asked to be given something to eat.

Another patient took it into his head that the air was full of poison, and remained all day with his hands over his mouth to prevent the air from entering. He was placed in the red room, and the following day he became quite

rational, asked for his breakfast, which he swallowed with avidity, and at the end of a few days he was able to be sent home. On the other hand, a maniac, very violent, and wearing the strait-jacket, was put into a room with blue glass windows, and in a few hours he became calm and gave no further trouble.

M. Lumiere, the well-known dry plate manufacturer at Lyons, was obliged to substitute green-colored glass in all the windows of his large room for the usual red, as the work-people sang all day, gesticulated, and the men made love to the women. Since the substitution they are quiet, do not speak a word, and seem less fatigued when they leave off work.—*Medical Age Report on Progress.*

NEURO-ANATOMY.

THE CHOROID PLEXUSES.—Dr. J. W. Findlay believes (*Brain*, Summer, 1899) that the choroid plexuses is of the same structure as the pia-archnoid on the brain surface, and resembles a spongy "lymph sac." A small quantity of elastic tissue occurs in the vessels of the choroid plexuses, arteries, veins, and villi-capillaries. The free surfaces of the villi and the depressions between them is covered by epithelium. A nerve plexus has been found in the *pia mater* and in the choroid plexus of the fourth ventricle. None has as yet been found in the choroid plexuses of the lateral ventricles. Medullated nerve fibers occur, but in small number. Findlay agrees with previous observers who have found that changes of the choroid plexus occur with greater frequency in psychoses attended by circulatory changes. For this reason they are especially frequent in secondary dementias following upon insanities with exaltation and excitement.

THE FOLLOWING NOTE is from *Nature* of May 11, 1898: "At the last meeting of the Anatomical Society of Great Britain and Ireland Dr. Elliott Smith settled a point in the comparative morphology of the brain which at one time was

the subject of a heated controversy between Huxley and Owen. In 1861, it may be remembered, Owen maintained that the calcar alvis and the calcarine fissure which causes it were characters peculiar to the brain of man, a statement which Huxley showed to be untrue, the formation being well marked in all primate brains. Dr. Elliott Smith has reached the further generalization that the calcar alvis is a character shown by all mammalian brains, with the possible exception of the prototherian. He identifies—and the reasons for this identification do not seem capable of refutation—the calcarine fissure of the primate brain with the splenial fissure of the brain of other mammals. This generalization will materially assist in homologizing the primate and unguiculate 'pallium.' "—*Medical Age.*

NEURO-DIAGNOSIS.

THE DIAGNOSTICAL VALUE OF FACIAL EXPRESSION.—
D. F. E. Wiedemann's (*Indiana Medical Journal*) paper read before the Vigo County Medical Society on this subject, has been reproduced in several medical journals. The points made in the paper depend largely on the altered expression of the eye, face and ears due to altered states of or impressions made on the nervous system. To them a long series of additional trophic changes in nails, hair and skin familiar to the neurologist, as well as voice and gait changes and alterations of psychic impression and of the ego might have been added. We give an abstract below:

The tuberous, thickened, or flat-nose, to Kaposi meant intemperance, struma or syphilis. Hæmorrhoids in a woman presenting a red-tipped nose, suggested attention to the digestive tract. The development of the external ear as significant of a corresponding development of the brain, the circulation and nutrition of which coincided to a similar state in the encephalic tissue. The confluent ear and adherent lobule associated with cerebral deficiency. The diagnosis of gout by observing that characteristic tense, red, and shining skin of the ear; or from the presence of small

concretions beneath the skin of the helix; and there could be no doubt of a diagnosis on seeing the hæmatoma auris, or insane ear. The diagnostic value of the teeth, especially in regard to syphilis; the crescentic notch in the incisors, diagnostic of inherited syphilis, not to be confounded with the pitted or craggy teeth, of the various cachexiæ.

The diagnostic value of the eye of jaundice, profound anæmia or narcotic poisoning; the prominent, staring eyeball of exophthalmic goitre. The altered appearance of the eye in cataract, pterygium, or glaucoma. If we remembered the origin and distribution of the third, fourth, and sixth nerves, we could very often surmise a diagnosis. The two forms of arcus senilis, the fatty and calcareous. The fatty form usually associated with fatty degeneration of the heart, the calcareous consistent with excellent health.

In the innervation of the face, the evidence of anxiety and cerebral irritation in the upper facial zone, about the forehead and eye, and the expression of bodily pain in the lower half around the nose and mouth. The elevated upper lip and partial exposure in front of teeth, peritonitis as well as abdominal tenderness. The spasmodic "grin," risus sardonicus, almost diagnostic of tetanus, and the facial expression of the lying-in woman. In children, facial expression was of the utmost importance, and was entitled to special study and consideration. Lividity induced by exertion and excitement, with normal respiration, meant malformation of the heart and vessels.

The congested cheek of the child meant a febrile or an inflammatory disease, as surely as we looked for cerebral disease in transient circumscribed congestion of the face, ears, and forehead. Oscillation of iris, inequality of pupils, and drooping of upper eye-lids. Dilatation of the *alæ nasi* during inspiration, with a contraction of the eyebrows and a countenance indicative of suffering, associated with severe inflammation of the respiratory organs. Why did we anxiously ask the mother if the baby had tears during the act of crying? Because we had observed that the absence of tears meant a severe and probably a fatal prognosis.

In severe diarrhœal troubles the rapid wasting of the

features, causing deep suborbital depressions, prominence and pointedness of the cheek bones and chin, and hollowness of the cheek, were certainly too well known to need more than mention. Hypertrophy of the brain denoted by great expansion of the cranium above the ears, with slight, if any, enlargement of the frontal portion.

An infant suffering from some cerebral or intestinal malady, a most unfavorable prognosis were we to find a thick Meibomian secretion of a puriform appearance collecting between the eyelids. In a case of facial paralysis the patient presented a striking condition. Half of the face expressionless; wrinkles in the forehead erased; eye was abnormally wide open and possibly watery; the corner of the mouth drooped, and the patient was unable to completely close the eye, and complained only of tenderness and pain in the right ear. What were we to do? First, ascertain the muscles involved; know the anatomy sufficiently well to give each muscle its respective nerve; then trace the nerve peripherocentrally through the substance of the parotid gland, the stylomastoid foramen, the aqueductus Fallopii, emerging through the meatus auditorius internus to its origin between the olfactory and restiform bodies. But long before we got to its origin, we might discover in the region of the petrous portion of the temporal bone some trouble with the mastoid cell or some carious condition of the petrous bone. We should then have no difficulty in giving a prognosis.

Of course, in mild forms of facial paralysis, usually of a rheumatic type, the affection was usually referred to the facial muscles; but, as a rule, there was no difficulty in distinguishing between mild facial paralysis due to peripheral irritation and one of severe form where there was complete reaction of degeneration in the nerve and muscle. In connection with severe neuralgia, there might occur a contraction resulting in what has been called "histrionic spasm." Dr. Ord's description of myxœdema is reproduced it *in extenso*:

The face swollen in every feature, so as to suggest the existence of renal disease; the swollen skin singularly waxy looking and anæmic, the swelling affected dependent and

non-dependent features equally. Thus the upper and lower lips were uniformly enlarged; the alæ nasi were thickened and broadened; the ridges of expression were blurred or coarsened, or the lines obliterated. The cheeks were over-spread with a dull pink flush, abruptly limited toward the orbits, and standing in vivid contrast with the anæmic skin around. The face wore a fixed, heavy, and withal most sad expression.

EDITORIAL.

[All Unsigned Editorials are written by the Editor].

Degeneracy and Genius.—According to the *Medical News* for October 7th, Lombroso has at last found a genius whom he can acquit of insanity. He has thus honored the memory of Goethe in a recent article in an Italian literary journal in which he refers to him as a normal, healthy and sublime poet. This is an offset to his recent assertion in the *Forum* that Columbus was a paranoiac. The *British Medical Journal* for July 29th, trenchantly traverses in a humorous manner Lombroso's evidences of insanity in Columbus and concludes: "Most people would doubtless prefer to be mad with Dante, Shakespeare and Columbus to being sane with the ideal man of the criminal anthropologist, who writes like copper plate and has everything snug and symmetrical about him." We think so too.—*N. Y. Medical Journal*.

Soiling the Family's Good Name.—The following appears as editorial comment on the *American Medical Association* in the June 17th number of the *Philadelphia Medical Journal*, referring to the late meeting at Columbus: In such a matter as personal ethics and dignity there was a most noteworthy absence of what has previously been an altogether too conspicuous presence of the guzzlers and "all nighters." Strange stories of "*Nothing stronger than lemonade, please, this year!*" and the banquets, even that of the *so-called* American Medical Editors, were from stories in which the delight in witless filth has often been an astonishing element of attractiveness. If this statement were true it was in bad taste to thus discuss it save in executive session.

This terrible arraignment of the A. M. A., records an exceedingly, remarkable and sudden reformation. If such a sad state of moral degradation existed in the association, now that it has reformed, would it not have been proper and prudent for a member of the family to have kept mum about it? "It is a foul bird that soils its own nest." Is not the editor of the *Philadelphia Medical Journal* a member thereof, and was he not lately the President of American Medical Editors Association?

Were matters in the A. M. A. ever so bad as above pictured? And if they were, is it not rather unfraternal for a member of the family to go out and tell about it?

A Scotch Physician, now resident in New York, has been telling a story of a madhouse doctor whose presence of mind alone saved his life. "A friend of mine was for a considerable time the medical superintendent of a lunatic asylum near Glasgow. One day in making his customary rounds he had occasion to visit the patients in the kitchen who were preparing the dinner. There were seven of them—all big, sturdy fellows, who were believed to be harmless. The keeper looked in upon them only now and again, feeling that his constant presence was unnecessary. The doctor unlocked the iron-barred door of the kitchen and went in among the lunatics. There were five large boilers containing scalding water, ready for making the day's dinner for the patients. One of the lunatics pointed at the boilers full of hot water, and, laying his hand upon the doctor's shoulder, said, 'Doctor, you'll make a fine pot of broth,' and the words had no sooner been uttered than the other six madmen shouted in a voice of delight, 'Just the thing,' seizing the doctor, were in the very act of putting him into one of the large boilers of scalding water, when the doctor had the presence of mind to say, but not a second too soon: 'Capital broth, but it would taste better if I took my clothes off.' The madmen, with a yell of delight, said 'yes,' and the doctor asked them to wait a moment while he went and took his clothes off, but as soon as he got out of the kitchen he

turned the key to the door and ordered the keeper to see to the lunatics being put under restraint.

"The doctor's presence of mind saved him, it is true, from a terrible death, but he died shortly after raving mad. The experience had destroyed his reason."

Americans a Free People.—*The Medical Standard* asks this pertinent question and pertinently answers it as follows. We give place to this forceful editorial as we hate tyranny and wish to see it die in every form in the Land of the Free, even in the shape of organized labor, a cause least of all causes, justified in being tyrannous or able to stand up before the public and practice it: The ill-advised and puerile plea has been made in behalf of labor union crimes—for they are nothing else—that legislation designed to suppress them would militate against the rights of the individual. Few competent judges of the law can question that statutory enactments, protecting non-union workmen from intimidation or assault, would bring to a speedy close scenes of cruelty and envious hatred with which the history of strikes abounds. No punishment visited upon men who defy all principles of free labor can be too severe. The country is slowly awakening to the enormity of strikers' outrages. The shuffling denials of responsibility on the part of labor organizations have never bedizened, and never will deceive, the public. By harboring the offenders within their ranks they become accessories before and after the fact. Their day of retribution will surely come.

Let us see to what lengths our inert legislation and laxity of civil authority suffer these desperadoes to go. In a recent strike in New York City a physician was severely injured because of his attention to a non-union motorman. Are honest Americans proud of such people?

Again, after the Cleveland strike a physician was threatened with personal violence if he dared minister to the dying child of a non-union man! Do honest Americans cover association with such villainy?

It is gratifying to record that the last victim of union malice was in no way deterred from the faithful perform-

ance of his duty both as a physician and as a free citizen.

How long will Fourth-of-July orators and fulsome patriots continue to descant upon the liberty of a people among whom such outrages find tacit countenance in the pusillanimity of courts and legislatures and the practical connivance of an enfeebled community?

The Tenth Congress of Italian Alienists was held in Naples, October 10th to 14th, under the presidency of Professor Tamburini, of Modena. The following subjects were discussed: Practical methods of individual physchological investigation in asylums and clinics, the light thrown by anatomical data on normal and pathological psychology, psychiatry and the study of the individual and his activity in social relations, and intoxications and infections in the pathogenesis of mental and nervous diseases.

The Insanity Problem.—We transfer to our pages for editorial indorsements, from the *N. Y. Medical Journal* of July 8th, the following: It is not probable that we shall ever wholly succeed in protecting person and property against the first violent manifestation of unrecognized insanity, but all persons who have once been shown to be insane, even if only temporarily, should be kept under competent supervision and such restraint as may be found necessary. There should be no known lunatics at large, however "harmless" they may be rated. The public hardly seem to appreciate the danger it is in from the outbursts of insane propensities, and this, it is to be suspected, is in great measure due to the community's sense of self-preservation having been drowned in a sentimentality that has been aroused and is continually nourished by harrowing tales of sane persons wrongfully immured in asylums and of the cruelties alleged to be practiced in such institutions. Nevertheless, the danger is great. A recent writer in the *Irrenfreund*, whose article is produced in the *Medizinisch-chirurgisches Central-Blatt* for April 14th, points out that accounts of outrages by lunatics are daily to be found in the newspapers in Germany, and that *Les Aliénés*

en liberté is a standing headline in the great French journals of psychiatry. He cites an instance in which a young man's offenses in several German towns have been condoned on the score of his insanity, and yet he is still at liberty.

But the great asylums are full almost everywhere. What is to be done? Shall we establish great colonies for the insane like the one at Dun-sur-Auron, in France? In the *Progrés médical* for June 3d the editor, Dr. Bourneville, the well-known alienist, says that the insane there complain bitterly of their exile, not being able to receive visits from their friends. The "family treatment" of the insane—that is, their maintenance and protection in family establishments, either their own or those of strangers—will apparently have to be resorted to on a larger scale than it has been heretofore. It is favored by the German Reichstag, but the writer in the *Irrenfreund* hints that the degree of medical supervision provided for is inadequate, not necessarily amounting to more than an examination once a year by the district physician. The problem of the family treatment of the insane has been earnestly studied by a number of French psychiatrists of distinction, particularly Dr. Cullerre and Dr. Bourneville, and the prevailing opinion among them seems to be that that form of management is applicable to a large percentage of the insane, especially at the beginning of their malady, but that it should not be carried out in their own families, but in those of strangers living within easy access of some large asylum, so that the patients may at all times be under adequate medical supervision. Experience in various countries seems to show that this is the best solution of the insanity problem at present attainable, though of course eternal vigilance is required in carrying out the plan.—*New York Medical Journal*, July, 1899.

Concerning a Peculiar Condition of Post-Hypnotic Stupor.—H. Higier (*Neurologisches Centralblatt, Medical Review*) describes a peculiar psychical condition, which he has had the opportunity of observing in a number of hypnotized individuals immediately after

awakening from the hypnotic sleep. This condition was never suggested nor could it be caused by the aid of a third person. The author, at first, was inclined to believe that the condition was a simulated or exaggerated one, but after repeated observations, on individuals under different conditions, he was impressed with the resemblance to the condition of stupor (*Dämmer Zustand*) of the alienists. The condition may be described as a modified stupor, in which the patient's mind is only partially active. He responds to questions, but answers often in a foolish and illogical manner. After a short interval the patient becomes mentally normal again; and he does not remember anything of the post-hypnotic condition. This condition appears to result, so far as we have observed it, from an imperfect and insufficiently awakening, the operator not taking time to thoroughly restore the normal will and consciousness to the hypnotized subjects. This is one of the dangers of hasty and indiscriminate hypnotism.

Abolishing the Insane Asylums.—The *Philadelphia Medical Journal*, June 24th, says: We have seldom seen a more flagrant piece of sensationalism than that contained in one of the New York Sunday newspapers of June 11, announcing that, as a result of recent investigations in a certain case of insanity, the asylums for the insane may be totally abandoned. The case was that of a young clergyman, who, as a result of an injury, developed a case of so-called double personality. His case is said to have been studied by several aspiring experts, who allowed themselves to be interviewed in quotation marks, and one of whom permitted his photograph to be printed. The case, so far as we can judge from the sensational presentation of it, was a rather commonplace one of hypnosis, and lent itself very readily to the reporter's time-worn references to Dr. Jekyll and Mr. Hyde. The astonishing part of the performance is not the part taken by the Sunday paper (for nothing is too rank for such journalism), but the fact that young physicians, who have still to win and to hold their reputations, would consent to cater to the depraved taste of the public for distorted medical literature. The case

itself was not a particularly remarkable one, and in no way justified any professional man using it as a text for an onslaught on the asylums of this country, and for a homily on the cure of insanity by "psychopathic" methods, as well as a tirade against the microscope and the methods of scientific psychiatry. The whole affair savors of advertising and charlatany, and we sincerely trust that the physicians involved were hoodwinked by reporters into making the exhibit, and did not do it by design. The statement of the newspaper that this one case warrants a belief that all cases of insanity are curable if taken in time and treated as this one was, is too preposterous to be refuted; while the claims ascribed to one of the physicians, that the microscope is to be displaced by the advanced methods of "psychopathic" hospitals, are too crude for serious consideration. The glaring headlines announcing a "reversal" of the treatment of the insane, and a possible abolition of the asylums, are an affront to public intelligence, and can only do mischief by tending to increase popular prejudice against some of our most important public charities. The physicians involved, it is to be hoped, will purge themselves of this contempt of professional opinion.

This is a timely and sensible rebuke.

The Primary Chimay.—The following letter is placed on record in these pages for future reference. We should be pleased to receive a psychical history and analysis of this erratic if not erotically deranged woman. She is a study for the psychologist. We are impressed with the conviction that the mantle of cerebral disease should cover her sin. She unconsciously states her case well in defense of a strain of morbid psychology in her mental composition. Healthy minded, though evil-hearted women are not so disingenuously shameless.

CLARA RIGO'S VIEWS.

THE FORMER DETROIT YOUNG WOMAN ISSUES A STATEMENT.

London, June 26.—Your correspondent is in receipt of the following from Clara Ward Rigo, formerly the Princess Chimay: "Sir: It is indeed terrible the false reports that have been circulated about us, especially as we are living quite alone and in seclusion. I forgive the evil reports concerning

myself, which are undoubtedly deserved, but I wish to rectify the harsh judgments against my former husband, the prince, who is not only a very handsome man, but also a good and honorable one, and who was one of the best and kindest of husbands and the most devoted of fathers. I am glad of this opportunity to defend him. Rigo and myself are in perfect health, happy and contented. He is a model of kindness and gentleness, and he appreciates the greatest sacrifice woman ever made for love, in that I left for him, husband, children, a crown position, honor and fortune to wander about the world in his society.

(Signed) CLARA RIGO."

Alcohol. The final truth about alcohol is that it is not really a permanently stimulating agent, but a transitory excitant ending in paralysis. It paralyzes the nervous centers of the small blood vessels from the start and thus dilates them, permitting more blood to enter the minor arteries, thus creating a deceptive sensation of warmth in skin and stomach, flushing the face and brain and other organs temporarily. But in cold weather and latitudes as Kane found among his men in the Arctics, drinking men freeze to death where abstainers escape with life. Alcohol has not the permanent supporting value of tea or coffee. Sir Garnett Wolseley in the Ashanti expedition replaced the alcohol with tea. Under the change his men were markedly superior to the armies who took alcoholic liquors instead. The idea that alcohol is a respiratory or hydrocarbon food was evolved by the experiments of Liebig, Bouchardot and the older chemists. Gubler, Brintz and others soon after, following in the wake of their German and French predecessors, came to believe in the miraculous concerning alcohol which, though it gave nothing to the body, in the way of material for reconstruction that might be transformed into power, yet produced most wonderful strength. But Carpenter, the great and level-headed English physiologist, finally reached the truth upon which the profession acts in the main to-day, that while, as an instant coursing through the blood to the centers controlling the circulation it accelerates it and acts like the whip and spur to the horse, it is not oats or corn or hay, and must meet with reciprocal and abundant food supply to be compensated for by great after rest, not to greatly damage the system. Alcohol does not give strength. It only calls out latent power temporarily and thus leaves exhaustion. The

drinking man gets tired sooner than the sober man at work and cannot do as much after. The recent carefully conducted experiments of Prof. Destree of the University of Brussels prove this. He found the subsequent paralyzing effect to outweigh the momentary stimulation, and the total work product obtained with the use of alcohol to be less than that obtained without it. This experiment, he says, offers one more justification from the realm of science, for the struggle against alcoholism for the highest welfare of society.

A vaso-motor paralysant causing transitory excitation of psychic neurons through super-abundant blood flushing. The arterioles are dilated through paralysis of their nerves of control. A deceptive impression of bonhomie, warmth and power is created by this transitory flushing of brain, face and skin.

The Death of W. B. Appleton in New York, October 19th, takes away the senior member from one of the most influential, wealthy and enterprising medical publishing houses in the United States. He was President of the D. A. Appleton Company and died at the ripe age of eighty-six years. The cause of his death is given as general debility. He may have needed neurological medical council in his later years, but never sought it. Old age needs constant and wise medical management just as an old business firm on the verge of dissolution and threatened bankruptcy needs the wisest and best of business care. There will not be too many neurologists in the medical profession or too many competent practitioners of any kind when the people learn how much they need medical counsel before they are compelled to go to bed and abandon the habit of waiting till they are thoroughly and dangerously ill before summoning a doctor. Extreme age needs medical management, as much as infancy.

Among the Newest Proprietary Coinages are Cystogen and Emissine. What word invention may we not expect now? We suppose cystogen generates cysts and emissine brings on emissions of some kind. Our proprietary friends are advancing.

Eugene Field on the Grip.—The late Eugene Field on recovering from the grip, wrote:

The gods let slip that fiendish grip
Upon me last week Sunday—
No fiercer storm than racked my form
E'er swept the Bay of Fundy;
But now, good-bye
To drugs, say I—
Good-bye to gnawing sorrow;
I am up to-day,
And whoop, hooray!
I'm going out to-morrow.

With aches and pain in bones and brain
I had I need not mention;
It seemed to me such pangs must be
Old Satan's own invention;
Albeit I
Was sure I'd die,
The doctor reassured me—
And sure enough,
With his vile stuff,
He ultimately cured me.

'Twas hard, and yet I'll soon forget
Those ills and cures distressing;
One's future lies 'neath gorgeous skies
When one is convalescing!
So now, good-by
To drugs, say I—
Good-by, thou phantom Sorrow!
I am up to-day,
And whoop, hooray!
I'm going out to-morrow.

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The medical profession has stood guard over the safety of civilization since its beginning studying its sanitary problems, fighting off and destroying its pestilences and staying its plagues and endeavoring to keep the men of its armies and ships in the best of condition for mutual destruction, and men of public affairs out of lunatic asylums and the other results of high pressure, mental life and other wrong living, and what has been the reward from the recipients of its benefactions. Secondary place and subordinate position in public esteem, civil, military and naval.

A thousand laboratories of scientific investigation give their laborious research, ten thousand men imperil life and health searching out laws of health and disease. By these labors and sacrifices it has been made possible for civilization to advance. The knowledge medicine, in its several departments of research, has given to the world, of man's limitations and powers of endurance, of his perils under civilization, demands upon his organism, of insidious disease germinating causes and how to destroy them have saved the possibilities to man of higher civilization. Yet how is this man of inestimable service valued?

In the government of his country this most valuable of counsellors has no place in the cabinet. The lawyer and the farmer are there, but the sanitary counsellor is absent as if the national health were a matter too insignificant to be represented in the councils of the chief executive. The rank of the surgeon-general of the American army is that only of a brigadier-general, a rank which would be reached by a colonel in a single campaign and was so attained in and after the Spanish-American war by many who but lately had only the rank of an ordinary surgeon in the service. When foreign ambassadors or ministers are selected to represent the country, why are medical men always ignored? Why this inadequate recognition generally of a most meritorious and valuable service? Much of it is the profession's fault in not properly esteeming themselves as constituent parties of the service, civil and military, of the government and in pressing their proper claims to just recognition.

Medical men are pre-eminently men of duty and devotion to the scientific demands of their high calling and too much neglect and too little esteem the importance of attention to this matter of proper recognition. They allow themselves to become too much engrossed with the exacting duty of their calling to take their proper place among men of affairs and demand and secure the official recognition they deserve. Here is a field for the independent and retired medical man. Let him go into politics, represent his country in congress, help make its laws and secure justice to his great profession. Let all medical men give thought and effort to this matter and medicine will be lifted to the plain to which it belongs in the councils of the nation.

Night Terrors.—E. Graham Little (*Pediatrics*, Oct. 15th) rejects the epileptic theory of their causation. In nearly two-thirds of his cases incipient heart disease was present. He maintains that they are caused by reflex stimulation almost always produced dyspnea. He sums up his findings and opinions as follows: 1. Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnea. 2. A preponderating number of cases are found in rheumatic subjects with early heart disease. 3. A considerable proportion of cases are due to obstruction of nasal cavities and fauces. 4. Digestive disturbances do not play the important part in causation that is often assigned to them. 5. The evidence for their causal connection with allied neurosis is scanty. 6. The attacks occur in the subconscious stage of early sleep, and are confined to children under puberty.

The propositions of this author are absolutely untenable. The attacks do not occur in the sub-conscious stage of early sleep, but are more often manifest in sleep's later stages. No neurologist of large clinical observation ever to our knowledge connected this peculiar neurosis of early childhood with epilepsy. The attacks are not in the great majority of instances produced by causes productive of dyspnoea, at least outside of the organism. They are not specially related to rheumatism or to obstructed nasal cavities. It would be strange if these peculiarly neuropathic children should

not be subject to other diseases of childhood, and especially to those Little mentions, but they verily sustain no causal relation. Night terrors have been again and again described by clinicians who found no other localized organic morbid condition coexisting. Night terrors is a nocturnal psycho-neurosis remediable by proper neurotherapy which, like all other proper neurotherapy should include the cure of any of the accidental intercurrent co-existent conditions Dr. Little considers as causes.

Dr. T. O. Summers Killed Himself.—Doctor Thomas Osmond Summers blew out his brains in the amphitheater of the St. Louis College of Physicians and Surgeons. Disappointment at not getting a coveted army position was, according to his widow, the motive. He was found dead at 6:30 p. m. where he had lectured for years. He occupied the chair of anatomy at the college.

In the middle of the afternoon Doctor Summers, as was his custom, asked one of the secretaries of the college if there was any mail for him. There was none. No one saw him again until Doctor Heles, the house surgeon, almost stumbled over the corpse. There is a police station a block away, and the officers were informed before any one was allowed to approach the body. Then it was seen that he had been shot in the left temple.

A message was sent to the home of Mrs. Summers, but some neighbor had already told her that he had been shot.

The impression was given her that it had been an accident until she had mustered up the courage to go to the college with her son and daughter.

"Poor man. He was broken in spirit by disappointment. He had looked for a permanent army position after he was mustered out from the volunteers," said Mrs. Summers. "He has been drinking of late, but it was due to his trouble. He was a good and kind man, but his heart was set on a Government position and the recognition came not."

Doctor Summers was about 45 years old. In the yellow fever outbreak in Memphis years ago he was one of

the few doctors who survived. He had made a profound study of the disease. He was called on by the Government many times to assist in exterminating the disease in the South. He married Miss Mosley of Nashville, Tenn.

Several letters which were written by Doctor Summers a short time before his death were found. One was addressed to his wife, another to Doctor W. J. Donohoe and there was a note to the public.

One note read as follows:

This pistol belongs to M. Wicke, jeweler, corner Eleventh and Franklin avenue. Please return with my thanks. SUMMERS.

On a letter-head of the St. Louis College of Physicians and Surgeons was written a poem. It is as follows:

Perdidi vitum.

Vale mundum.

Good-night, old world—good-bye to all your joys,
Your sorrows, pleasures, passions, pomps and noise.

I leave you for the eternal silence of the stars;
The deafness of unbounded space, where bars
No longer hold the soul in durance vile,
Where naught can wound and nothing can defile.
There the pure spirit shall despise the things
The sense on earth hath loved.

On wings bathed in the ether of Eternity—
How sweet to feel from every passion free—
And yet it is an awful leap so take!
Into the great unknown—perchance to wake
To greater woes, indeed, than those we have
And hoped to bury in the silent grave,
But still the great majority is there,
Why should we, then, turn pale with fear?
Or tremble when the hour supreme has come,

As soon or late it must?

Man's final home—

The grave—at least gives rest from troubles here,
And we may hope for sweet oblivion there.
Then, Charon, come! I signal thee to-night,
Come—row me o'er the Styx. I've lost life's fight.

—Osmond.

On the reverse side of the sheet on which the poem was written appeared:

"And yet it is an awful leap to take into the great unknown."

The letter to his wife follows:

—My Darling Wife: I have reached this point where Azonel's thread is all that is left to me. I feel well assured that your love and esteem will crown my memory when they could not bless my life. I die that you might live. Think of me as I was in the palmier days of my life and let the mantle of your charity cover those faults which were more infirmities than sins, engendered in despondency and cultivated by disappointment. I send the bullet through my brain instead of my heart that you may know its last throb beat for you and the dear ones I leave with such ineffable sorrow. Good-bye.

OSMOND.

A postscript reads:

Couldn't get hold of a revolver and so took the Petronious route.

The last sentence was scrawled and the following was evidently written some time later:

This hand that has wielded the pen, guided the scalpel through anatomic labyrinth, grasped the sword in time of battle, now turns with autophagic power upon the organism of which it has been so long a necessary part.

The letter to Doctor Donohoe was sealed. There were other letters referring to the suicide, but Doctor Spain, who accompanied the corpse to the morgue, objected to their being given out for publication, and the Sergeant locked the letters up.

Doctor Summers was a Surgeon Major with General Shafter's army in the Santiago campaign.

Newspaper Sense of the Proprieties.—In a great metropolitan daily of St. Louis, on its second page November 1st, the capture of General White's left by the Boers and details of White's movements, and captions of heavy casualties, Kimberly next, etc., appears the beautiful announcement of a quack who works *in extremis*, Piles cured without the knife. Then follows a telegraphic account of a seminary burned, and then a two-day cure for la grippe, then an account of the movements of Bishop Henry Adams Neeley, and then Orangine Short Stop No. 12 for diarrhoea, one powder every hour.

All this in the *Globe-Democrat*, a Republican newspaper that makes pretensions to political cleanliness and disdains and denounces the yellow journals as unclean. What is newspaperdom coming to? Piles and politics, gales and gallstones, fist fights and fistula; personal journalism and pink pills, the Transvaal and that tired feeling, Cuba and cubebs, the

Philippinos and Pine Tar Syrup, Reconstruction and before and after taking, President McKinley and Maguire's Condurango, Vice-President Hobart's illness and female weakness, Advice from Porto Rico and a Word to Weak Men, the Orange Free State and Female Weakness Cured, takes Weak Generalship of the English and Warner's Safe Kidney Cure, News from Buchanland and Helmbold's Extract of Buche, The Pope of Rome and Pure Malt Whiskey, Imperialism, Expansion and Female Pills, News for the Family and those in a Family Way, Notes from India and the Indian Herb Doctor, Clean Havanas and Clairvoyant Cures, etc., etc., etc. And this is high-toned daily American journalism. This business used to be confined to the religious press, now the great dailies are living off this moral prostitution.

REVIEWS, BOOK NOTICES, ETC.

SOME MEDICO-LEGAL ASPECTS OF TRAUMA IN RELATION TO DISEASED CEREBRAL ARTERIES. By William C. Krauss, Buffalo, N. Y.

MENTAL DISEASES, by W. Bevon Lewis, L. R. C. P. (Lond.) M. R. C. S., (Eng.) Second Edition, thoroughly revised, enlarged, and partly rewritten. Published by P. Blankiston, Son & Co., Philadelphia, Price \$7.00

P. Blankiston, Son & Co., Philadelphia, 1012 Walnut Street, send the second edition of this valuable book. Its appearance so soon after the first addition so lately reviewed in our pages, speaks volumes for its just appreciation by the profession, and we have only to add that our high appreciation expressed concerning the first edition has undergone no change since we gave expression thereto last year.

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THE ANATOMY AND PHYSIOLOGY OF THE NERVOUS SYSTEM AND ITS CONSTITUENT NEURONES, AS REVEALED BY RECENT INVESTIGATIONS. Designed for the use of Practitioners of Medicine and of Students of Medicine and Psychology. By Lewellys F. Barker, M. B., Associate Professor of Anatomy in the Johns Hopkins University and Assistant Resi-

dent Pathologist to the Johns Hopkins Hospital. 8vo, with over 800 illustrations. Sold by subscription, Cloth, \$5.00

To those who gave themselves the pleasure of reading the contributions of this author in the *New York Medical*, this book will be most welcome for the additional chapters in continuation of an entertaining instructive subject, novelly treated, and to all medical men its pages will prove to be profitable and entertaining. The pages of the book are replete with unique scientific surprises to the neurologist as well as to the anatomist and will aid the practitioner in any and every department of medicine in understanding better that omnipresent nervous system which the physician and physiologist encounter in practice and study.

LES TROUBLES MENTAUX DE L'ENFACE, Par Le Dr. Marcel Manheimer, Ancien Interne des Asiles de la Seine et de la Clinique des Maladies mentales à la Faculté Médecin des Bureaux de Bienfaisance de Paris. Price

4 fr. Les maladies mentales de l'enfant, d'un si grand intérêt scientifique et social, ne sont élucidées ni dans les traités—même les plus volumineux—des maladies de l'enfance, ni dans les traités de psychiatrie générale. C'est donc faire œuvre nouvelle que de les expliquer, de les classer, d'en faire, en un mot, une étude systématique. L'auteur, déjà connu d'ailleurs du public médical, s'est aidé des travaux scientifiques les plus récents, et de ce qu'ont pu lui enseigner, d'une part trois années entières passées dans les asiles d'aliénés, de l'autre le riche service de consultation qu'il possède actuellement au dispensaire du 18^e arrondissement. Preface de M. le Professeur Joffroy.

Vient de Paraitre à la Société D'éditions Scientifiques 4, Rue Antoine-Dubuis. Place de l'école-de-médecine, Paris.

REVIEW OF REVIEWS. The American Monthly Review of Reviews for September contains a remarkably attractive group of contributed articles.

The timeliness of the subjects treated is seen by a glance at the table of contents. The war in the Philippines is summed up by John Barrett; the outcome of the Hague conference is set forth by W. T. Stead; the subject of trusts is discussed by George E. Roberts and by Henry Macfarland; Hezekiah Butterworth writes of "The Future Value of the New England Farm," while Prof. L. H. Bailey answers affirmatively the question, "Does Farming Pay?" Sylvester Baxter tells of the progress made by the State of Massachusetts in her public library system, and Gilbert K. Harroun describes the work of the Cuba Educational Association of the United States; a sketch of "The New Secretary of War," is contributed by Henry Macfarland, while Dr. William Hayes Ward writes of Colonel Ingersoll and Erica Glenton of the late Grand Duke George of Russia.—Waldo Coe, in *Medical Sentinel*.

DIAGNOSTIC DES MALADIES DE LA MOELLE (siège des lésions), par le Dr. Grasset, professeur de clinique à l'Université de Montpellier, associé national de l'Académie de médecine, lauréat de l'Institut, 1899, 1 vol. in-16 carre, 96 pages, et figure, cartonné 1 fr. 50. Librairie J. B. Baillière et Fils, 19, Rue Hautefeuille (près du Boulevard St-Germain), à Paris

La neuropathologie est à l'ordre du jour en ce moment. Etant donné un malade chez lequel on a reconnu une maladie de la moelle, comment peut-on cliniquement déterminer le siège précis de l'altération médullaire? Quel est le système ou quels sont les systèmes de la moelle qui sont exclusivement ou principalement atteints? A quelle hauteur de l'axe spinal siège la lésion? Voilà les questions qu'étudie M. Grasset.

THE MARINE HOSPITAL SERVICE. We congratulate Surgeon General Wyman of this Service, on the work of his bureau during the past year.

The record of his work is before us and it speaks more than a volume for the energy, efficiency and zeal of his department of Government Sanitation. Such work as that of the Marine Hospital Service with its annual results published and distributed broadcast, must sooner or later convince our legislatures that sanitation is as important as any other sort of public service and entitled to department recognition. We need a medical bureau and a medical man in the President's Cabinet.

PROGRESSIVE MEDICINE, VOL. III. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and *Materia Medica* in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 440 pages, 11 illustrations. Lea Brothers & Co., Philadelphia and New York.

REPRINTS.

Mouth-Breathing in Children Caused by Adenoids and Its Treatment. By Hal Foster, A.B., M.D., Medical Department of the New York City University, Kansas City, Missouri, Laryngologist to St. Margaret's Hospital, Fellow of the Kansas City Academy of Medicine, Member of Missouri and Kansas State Medical Societies and Western Otolaryngologic Association, &c.

Habitual Constipation. By W. Xavier Sudduth, A. M., M. D., Fellow of the Chicago Academy of Medicine; Professor *Mogbid Psychology*, Post Graduate Medical School of Chicago; Consulting Physician and Neurologist to the Chicago Eye and Ear Hospital; Chief Consulting Physician Alpha Sanitarium, Etc., Etc.

The Surgical Treatment of Tumors within the Spinal Cord. By James J. Putnam, M.D., Professor of Diseases of the Nervous System, Harvard Medical School, and J. Collins Warren, M. D., Moseley Professor of Surgery, Harvard Medical School.

A Case of Syringomyelia and Two Cases of Tabes with Trunk Anesthesia. By Hugh T. Patrick, M. D., Professor of Neurology in the Chicago Polyclinic; Associate Professor of Nervous Diseases, Northwestern University Medical School, etc.

The Disease of Convulsive Tic (Gilles de la Tourette's Disease), with

Special Reference to a Hypothesis as to Etiology. By Bernard Oettinger, M.D., Clinical Instructor in Neurology, Gross Medical College, Denver, Colorado.

The Importance of Early Diagnosis in Locomotor Ataxia, as Affected by the Newer Pathology. By William Broaddus Pritchard, M.D., Adjunct Professor of Mental and Nervous Diseases in the New York Polyclinic.

Testimony in Regard to the Use of Preservatives in Food Products at the Pure Food Hearings before the Committee on Manufactures, United States Senate. Senator Wm. E. Mason, Chairman.

Report of a Case of Tumor of the Brain Symptomatically Relieved by Exploratory Operation upon the Skull. By William Broaddus Pritchard, M.D. and John A. Wyeth, M.D., of New York.

How to Give Anæsthetics. By William S. Deutsch, M. D., St. Louis, Anæsthetist to the Missouri Medical College Surgical Clinic, Dr. Tuholiske's Surgical and Gynæcological Hospital, etc.

The Importance of a Diagnosis of Melancholia in Its Incipiency, with a Study of Two Cases of the Convulsive Form. By S. Grover Burnett, A.M., M.D., Kansas City, Mo.

Melancholy of Leprosy is not an Invention of Dr. Ashmead, Dr. Hansen's Authority Notwithstanding. By Albert S. Ashmead, M.D., New York.

Report on Formaldehyd Disinfection in a Vacuum Chamber. By P. A. Surg, E. K. Sprague, U. S. M. H. S., Acting Director Hygienic Laboratory.

Saw Palmetto; Contribution from the Laboratory of General Chemistry, University of Michigan. By P. L. Sherman and C. H. Briggs.

Some of the Problems of Professional Life and their Relation to Success in Practice. By H. A. Tomlinson, M.D., St. Peter, Minn.

One Hundred and Sixty-Six Cases of Cancer of the Pregnant Uterus occurring since 1886. By George H. Noble, Atlanta, Ga.

A Case of Friedreich's Ataxia, with Abbreviated Clinical Digest. By S. Grover Burnett, A.M., M.D., Kansas City, Mo.

Report of a Case of Anæsthesia Produced by Mercury, with Remarks. By C. Teavis Drennen, M.D., Hot Springs, Ark.

Our Work and Its Limitations. By Edward C. Runge, M. D., Superintendent St. Louis Insane Asylum, St. Louis, Mo.

Syphilis of the Nervous System as the General Practitioner Sees It. By C. Travis Drennen, M.D., Hot Springs, Ark.

The Influence of Extirpation of the Ovaries upon Structural Changes in the Uterus. Hunter Robb, M.D., Cleveland.

The Puerperal Insanities. By H. A. Tomlinson, M. D., Superintendent Saint Peter State Hospital, St. Peter, Minn.

Notes upon Injuries of the Head and Tubercular Pelvic Peritonitis. By Charles C. Allison, M.D., Omaha, Neb.

Resection of the Cervical Sympathetic in Glaucoma. By Prof. Thomas

Jonnesco, of Bucharest, Rôumania.

Habitual Constipation. By W. Xavier Sudduth, A.M., M.D., Fellow of the Chicago Academy of Medicine.

Essential Relation Between Biology and Medicine. By James F. Hibberd, M.D., LL.D., Richmond, Ind.

Dress as a Factor in the Causation of Catarrhal Diseases. By C. P. Ambler, M.D., Asheville, N. C.

A Case of Torticollis and Its Latest Treatment. By S. Grover Burnett, A.M., M.D., Kansas City, Mo.

Seven One-Minute Points on Syphilis of the Nervous System. By Hugh T. Patrick, M.D., Chicago.

Osseous Changes in Hereditary Syphilis. By C. Travis Drennen, M.D., Hot Springs, Ark.

Irrigation with Salt Solution and other Fluids in Surgical Practice. By Hunter Robb, M.D.

A Study in the Responsibility of Criminals. By W. F. Becker, M.D., Milwaukee, Wis.

Aneurysm of the Aortic Arch. By B. Merrill Ricketts, Ph.B., M.D., Cincinnati, Ohio.

Chemicolegal Testimony—Strychnine. By G. H. Meeker, M.S., Ph.D., of Philadelphia.

Eudoxine in Paediatric Practice. By Gustavus M. Blech, A.B., M.D., Chicago, Ill.

Femoral Artery and Vein. By B. Merril Ricketts, Ph.B., M.D., Cincinnati, Ohio.

Vesicular Degeneration of the Chorion. By Carl E. Black, M.D., Jacksonville, Ill.

Advice to Gonorrhœal Patients. By Fred C. Valentine, M.D., of New York City.

An Indispensable Part of Drug Valuation. By E. M. Houghton, PH.C., M. D.

Brain Tumor Simulated by Anæmia. By Hugh T. Patrick, M.D., Chicago.

Surgical Appendicitis. By Merrill Ricketts, Ph.B., M.D., Cincinnati.

Echolalia. By Martin W. Barr, M.D., Elwyn, Pa.

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